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Phihong Midspan POE GUI
User Manual
SNMP v3, v2, v1 Rev. 1.2
PES12781

Compliant Models:

POE125U-8N
POE370U-480-8N
POE370U-480-16N
POE370U-480-24N
POE576U-8ATN
POE576U-16ATN
POE576U-24AFATN

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Notice

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NOTE: Midspans are for indoor use only!

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1. Safety Procedures

1.1. General Precautions

General – Please read the following precautions carefully before installing and connecting the system to a power source.

Note – Only qualified and trained service personnel (in accordance with IEC 60950 and AS/NZS 3260) should install, replace, or service the equipment. Install the system in accordance with Country, National or to the U.S. National Electric Code if you are in the United States.

Precautions:

1. The building facilities in which the product will be used requires a fuse or circuit breaker no larger than 15A for 120Vac (U.S.A.) or 10A, 230Vac (international). The building facilities must protect the Midspan from over current or short-circuits.
2. Before connecting the Midspan to a power source (including power cord requirements), read the Midspan Hardware Setup procedure in Section 2. This procedure as with all procedures and instructions can be found in the Midspan User Manual. To download a copy of the Manual, visit www.phihong.com.
3. To prevent the Midspan from overheating, do not operate the product in an area that exceeds the maximum recommended ambient temperature of 40°C. Allow at least 3 to 4 inches of clearance around all ventilation openings.
4. In order to Support the Midspan weight, do not stack the chassis on any other equipment. Shelf mounted equipment requires a stable and durable surface. When installed, do not push or pull on the Midspan when the equipment is installed.
5. The Midspan consists of two rows of “Data” and “Data & Power” ports. The ports use RJ-45 data sockets. Do not connect telephone cables into these ports. Only RJ-45 data cables may be connect to these sockets.
6. Do not work on the Midspan system or connect or disconnect the cables, during periods of lightning activity.
7. The AC or DC plus/socket combination must be accessible at all times, as it serves as the main disconnect device to the product.
8. Before servicing the product, always disconnect the products from its AC and DC source.
9. Disposal of this product should abide by all appropriate National laws and regulations.

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1.1 Sicherheitsmaßnahmen – Allgemeine Vorsichtsmaßnahmen

Allgemein – Lesen Sie die folgenden Vorsichtsmaßnahmen sorgäfltig durch, bevor Sie das System installieren und an eine Energiequelle anschließen.

Hinweis – Das Gerät derf nur durch qualifiziertes und ausgebildeten Dienstpersonal (gemäß IEC 60950 [Vorschrift 60950 der Internationalen Elektrischen Kimmission] und AS/NZS 3260 [Vorschrift für Australien und Neuseeland]) installiert, ersetzt oder repariert werden. Installieren Sie das System auch in Übereinstimmung mit den geltenden nationalen oder europäischen Vorschriften bzw. Der NEC-Vorschrift, falls Sie sich in den Vereinigten Staaten befinden.

Vorsichtsmaßnahmen:

1. Die Gebäudeinstallationen, in denen das Produkt benutzt wird, müssen über eine Sicherung oder einen Schutzschalter mit maximal 15A für 120 Vac (USA) oder 10A für 230Vac (international) verfügen. Dis Gebäudeinstallationen müssen das Midspan-Device vor zu starkem Strom oder Kurzchlüssen schützen.
2. Lesen Sie vor dem anschließen des Midspan-Device an eine Energiequelle (einschließlich der erforderlichen Anschlussleitungen) die Setup-Anleitung für Ihre Midspan-Hardware in Kapitel 2 genau durch. Dieses Verfahren wird zusammen mit allen weiteren Vorgängen und Anweisungen im Benutzerhandbuch für das Midspan-Device beschrieben. Sie Können das Benutzerhandbuch unter www.phihong.com herunterladen.
3. Um das Midspan-Device vor Überhitzung zu schübenutzen Sie das Produkt nicht in Räumen, die maximale empfohlene Umgebungstemperatur von 40°C überschreiten. Lassen Sie um alle Lüftungsöffnungen herum mindestens 7,5 bis 10 cm (3-4 inches) frei.
4. Stützen Sie das Gewicht des PoE Midspan-Device nicht ab, indem Sie das Gehäuse auf ein anderes Gerät stellen. Falls Sie das Gerät auf ein Gestell montieren, muss dieses eine stabile und haltbare Oberfläche haben. Nach der Installation des Systems bewegen Sie das Midspan-Device nicht mehr.
5. Das Midspan-Device enthält zwei Reihen mit “Datenports” und “Daten-und-Stromports.” Die Ports verwenden RJ45-Datenanschlüsse. Schließen Sie keine Kabel an und trennen Sie keine Kabelverbindungen während Gewittern mit Blitzen.
6. Führen Sie an dem Midspan-System keine Arbeiten durch schließen Sie keine Kabel an und trennen Sie keine Kabelverbindungen während Gewittern mit Blitzen.
7. Der Steckanschluss für Gleich- oder Wechselstrom muss jederzeit zugänglich sein, da er als Haupttrenngerät für das Produkt dient.
8. Trennen Sie das Produkt immer erst von der Stromquelle, bevor Sie Wartung oder reparaturarbeiten daran durchführen.
9. Entsorgen Sie dieses Produkt gemäß aller geltenden Gesetze und Vorschriften Ihres Landes und der EU (falls Sie sich in einem Land der EU befinden).

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2. Midspan Hardware Setup

2.1 Physical Hardware Appearance:

Front Side of the Midspan:

Figure 1: The Midspan is not Connected

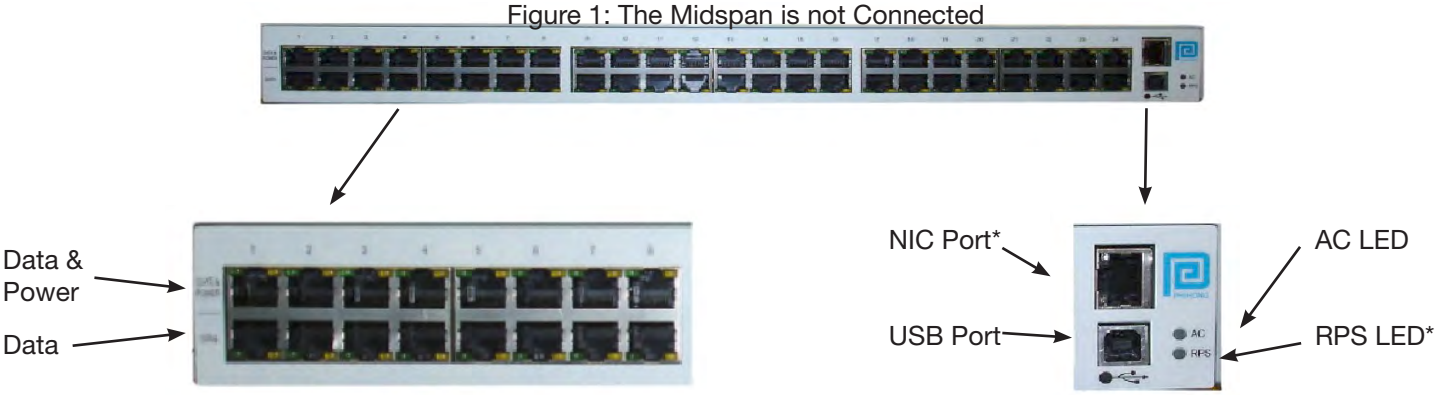
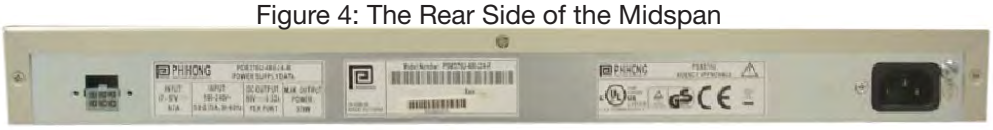


Figure 2: Data & Power (top row), Data (bottom row)

Figure 3: Connectors and Indicators

Rear Side of the Midspan:

Figure 4: The Rear Side of the Midspan



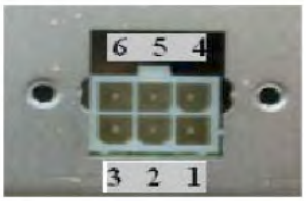


Figure 5: DC Power Connector*

Pin	Description
1	+47VDC to +57VDC
2	Current Share
3	-47VDC to -57VDC
4	+47VDC to +57VDC
5	Not Used
6	-47VDC to -57VDC

Figure 6: AC Input Connector

DC IN:Molex, 6 pin p/n 39-30-0060 or equivalent
DC IN Mate: Molex, 39-01-2065, pin p/n 39-00-0077

AC IN: IEC320 inlet 3 pin

* Optional Components - please see appendices A and B

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2.2 Powering Your Midspan

Power Cord Requirements

Power cords must meet the requirements for the country it is intended to be used.

U.S.A. and Canada

- The cord must have a minimum of 10A rated current competence
- The cord must be CSA or UL approved
- The minimum requirement for the flexible cord is:
  - 18 AWG (10A)
  - Three-Conductor (Line, Neutral, Ground)
  - Type SV (stranded Vacuum Rubber Jacketed) or SJ (stranded Junior Rubber Jacketed) or SVT (Stranded Vacuum Rubber Jacketed Thermoplastic) or SJT (Stranded Junior Thermoplastic)
- The plus must be earth-grounded with a NEMA 5-15 (15A, 125V) or NEMA 6-15P (15A, 250V) configuration

Europe

Switzerland

- The supply plug must comply with SEV/ASE 1011

Denmark

- The supply plug must comply with section 108-2-D1, standard DK2-1a or DK2-5a

United Kingdom

- The Midspan is covered by General Approval (section 16.16.060, NS/G/12345/J100003, for indirect connection to a public telecommunication system

France and Peru

- IT equipment cannot power this device. In the case of an IT powered device, the unite needs to be powered by 230V through an isolation transformer with a ratio of 1:1 and the secondary connection (Neutral) is properly grounded

- The Midspan must have access to a nearby power outlet. By disconnecting the power cord from the outlet, you will eliminate power from the device.
- The flexible cord that connects to the Midspan must have a configuration to connect with an EN60320/IEC320 inlet connector.
- According to the EN60950/IEC 950 specifications this device functions under SELV (Safety Extra Low Voltage) conditions. The conditions are true if the equipment and the connected device functions under SELV conditions.

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2.3 Connecting Ethernet Cables*

Figure 7: POE370U-480-24N connected through 'data & power' line

Figure 8: NIC Cable Connected*

2.4 Connecting USB and Power Cables

USB cable:

The USB cable is connected to the USB connector located in the front side of the Midspan and a USB port on your PC/laptop.

Figure 9: USB Cable*

Figure 10: USB Cable Connected

AC power cord:

The AC power cable is connected to the AC power connector located in the rear side of the Midspan and the power outlet.

Figure 11: AC Power Cord**

*Ethernet and USB cables are not included
**AC power cord may be ordered separately

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2.5 Powering UP

Midspan receives power via the power cord. In order to apply or remove power to/from the Midspan connect or disconnect the AC power cable to/from the AC power connector on the rear side of the unit.

With AC power applied, the unit starts-up and the internal fans are active. The device runs through a quick power-on test, which takes less than 10 seconds. During this period, all ports are initially disabled and the port indicators light up. The sequence of the port LEDs are shown in section 2.6 LED Indicator – Cold Start. Ports are now operating under normal conditions.

2.6 LED Indicator:

Cold Start:

a. AC – LED turns 'green' » remains on

b. NIC – LED turns 'green' » red » green » turns off » red » turns off (unless connected)

c. 24-Ports (with ports connected) – LED turns 'orange' » green » orange » green » turns off – LED turns 'green individually » ports 1,9,17 » ports 2,10,18 » ports 3,11,19 » ports 4,12,20 » ports 5,13,21 » ports 6,14,22 » ports 7,15,23 » ports 8,16,24 » All 24-Ports are connected – LED remains 'green'

d. 24-Ports (without ports connected) – LED turns 'orange' » green » orange » green » turns off – LED blinks 'orange individually » ports 1,9,17 » ports 2,10,18 » ports 3,11,19 » ports 4,12,20 » ports 5,13,21 » ports 6,14,22 » ports 7,15,23 » ports 8,16,24 » Blinks 'orange' across all 24-Ports

When 'System Reset' is clicked on the GUI (applications file):

a. AC – LED remains 'green'

b. NIC – LED remains off until the unit is connected

c. 24-Ports (with ports connected) – same sequence as Cold Start

d. 24-Ports (without ports connected) – same sequence as Cold Start

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Table 1: LED Indicator

Indicator	Conditions			
	LED Off	Green	Orange	Blinking Orange
Port LED	Indicated port is disabled	Indicates port is connected	Indicates port has an error	Indicates port is disconnected but enabled
NIC LED	Indicates NIC is disconnected form Network	N/A	Indicates NIC is connected to Network	N/A
AC LED	Indicates Midspan is not powered	Indicates Midspan is powered	N/A	N/A

2.7 Rack-Mounting Installation

Figure 12: Rack Mounted Midspan (Front)

Figure 13: Rack Mounting Bracket and screws (side/rear)

Position the Midspan on the rack. Arrange the mounting bracket to the corresponding screw holes on the Midspan. Keep the screw area visible to insert screws, and then tighten the screws. Screws and brackets will be included in the package.

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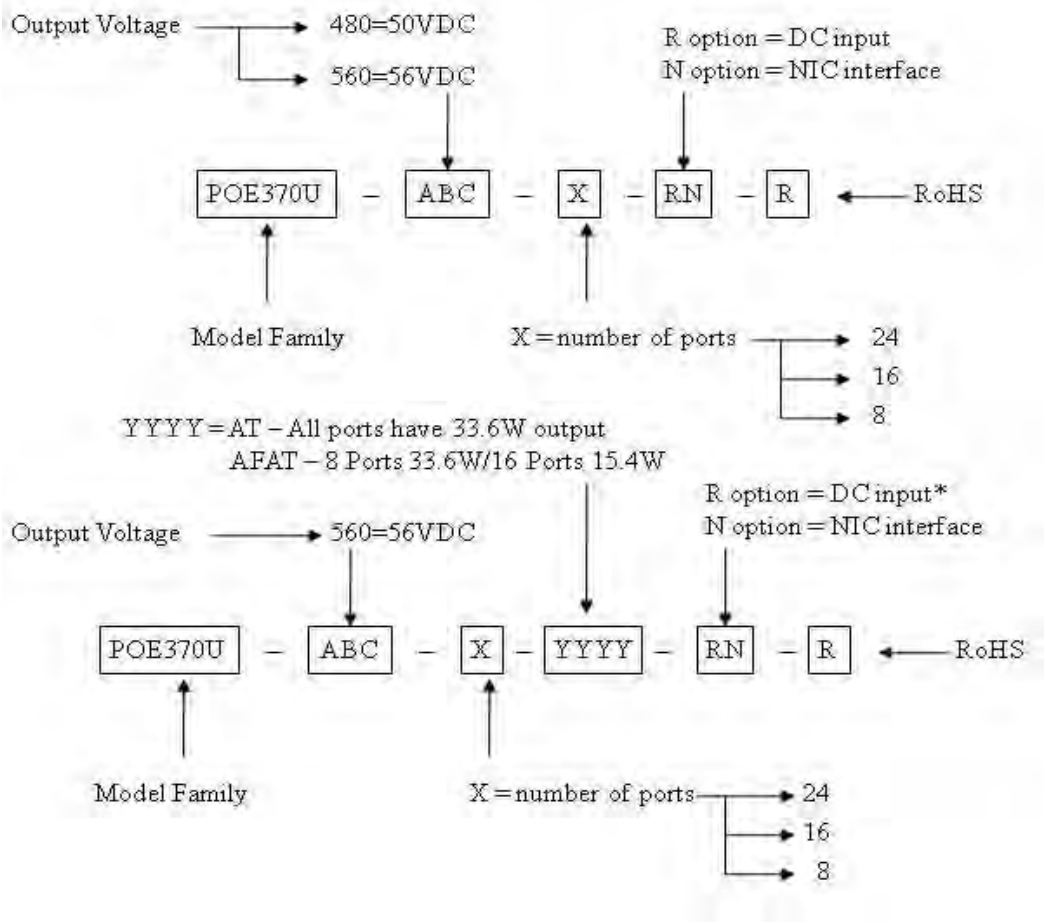
2.8 Technical Specifications

Figure 14: Technical Specifications



Mechanical Specifications:

Dimensions - 17.25 inch (438 mm) length
8.98 inch (228 mm) width
1.75 inch (44.5 mm) height

Environmental Specifications:

Temperature

- Operating: 0ºC to +40ºC
- Non-Operating: -25ºC to +65ºC

Relative Humidity

- Operating: 5 to 90%
- Non-Operating: 5 to 90%

*Contact Phihong Sales for this option

Electrical Specifications:

Table 2: Electrical Specifications

Parameters	Specifications		
AC Input Voltage Rating	100V AC to 240V AC		
AC Input Voltage Range	90V AC to 264V AC		
AC Input Current	5.5A (RMS) at Max Load		
AC Input Frequency	47Hz to 63Hz		
Max. In-Rush Current	30A for 115V AC at Max. Load 60A for 230V AC at Max. Load		
DC Input Voltage Range (-R Option)	47V DC to 57V DC		
DC Input Current	8.7A Max.		
AC Output Voltage	**POE370U**		**POE576U**
	-480	-560	-560
	50V DC	56V DC	56V DC
Max Load Current	0.32A	0.275A	0.65A
Output Power, per Port			
POE370U	15.4W (not to exceed total output power)		
POE576U-AT	33.6W (not to exceed total output power		
POE576U-AFAT	Ports 1-8: 33.6W / Ports 9-24: 15.4W (not to exceed total output power)		
Total Output Power	**No. of Ports**		
	-8	**-16**	**-24**
POE370U	125W max	250W max	370W max
POE576U-AT	268W max	537W max	N/A
POE576U-AFAT	N/A	N/A	515W
Nominal Output Voltage	44V DC to 57V DC		

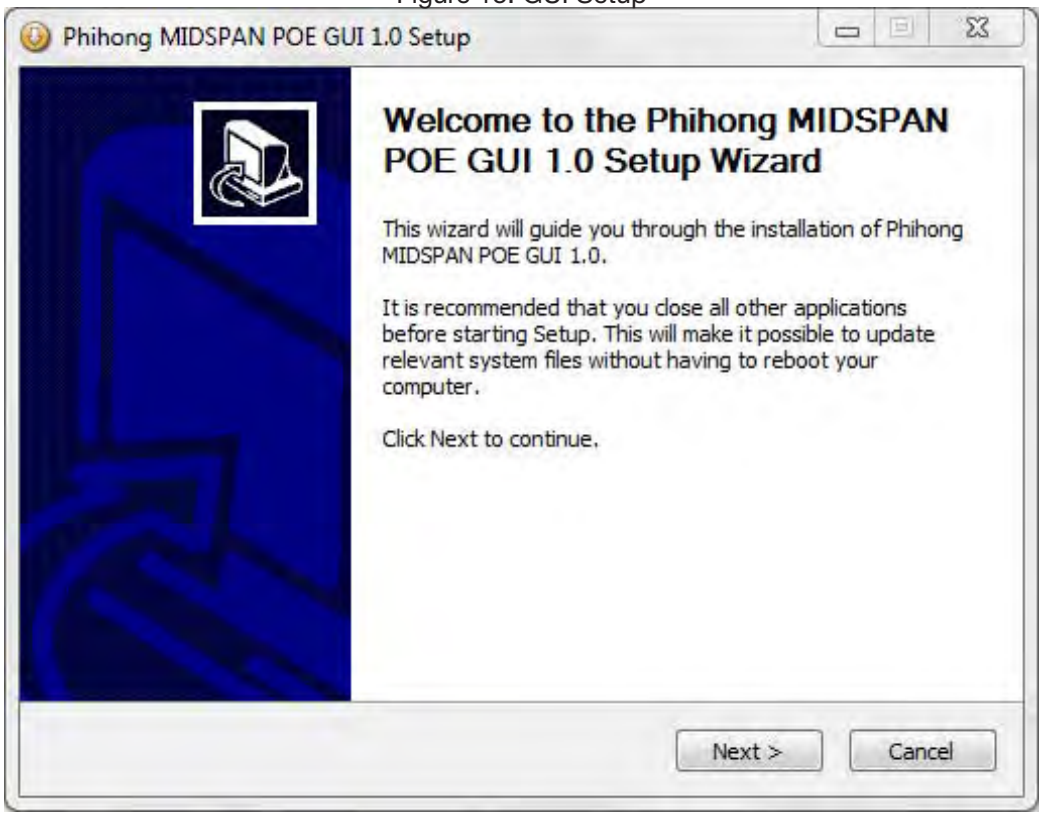
3. Phihong GUI and USB Driver Installation:

Please locate and download the file **Phihong GUI Installation** from the support section of the Phihong websites: www.midspans.com or www.phihong.com.

Please follow the Installation Wizard to install the Phihong GUI for your model, and the USB-to-Serial Com Port driver. The USB-to-Serial Com Port driver is necessary for communicating between the Midspan via a Communication Port on the PC.

Example of the Setup File

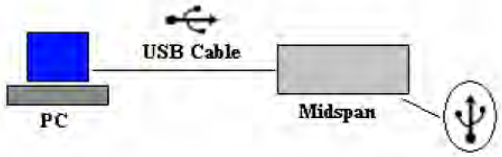
Figure 15: GUI Setup


Phihong MIDSPAN POE GUI 1.0 Setup
Welcome to the Phihong MIDSPAN POE GUI 1.0 Setup Wizard
This wizard will guide you through the installation of Phihong MIDSPAN POE GUI 1.0.
It is recommended that you close all other applications before starting Setup. This will make it possible to update relevant system files without having to reboot your computer.
Click Next to continue.
Next >
Cancel

Note: Please refer to the Phihong website to insure you are installing the latest version of the Phihong GUI. The example shown is using the Midspan POE GUI.

3.1 PC-to-Midspan Connection via USB/RS232

Figure 16: PC-to-Midspan Connection Diagram



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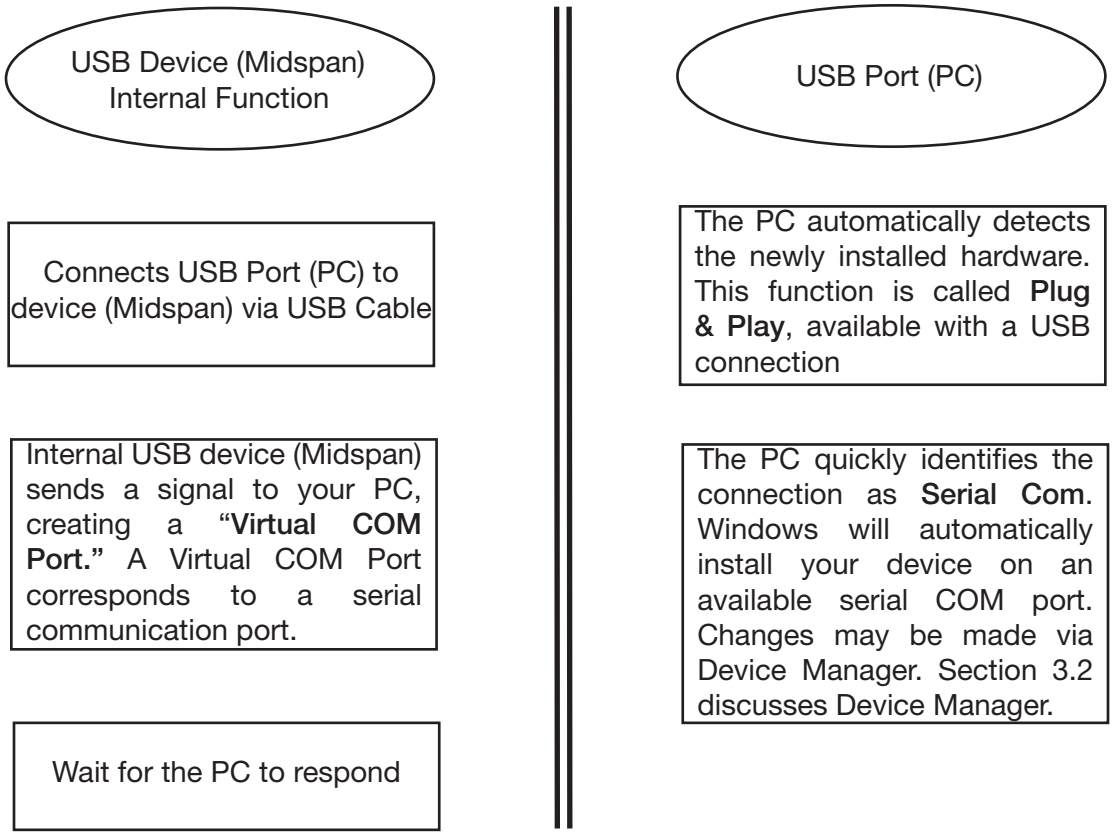
3.2 USB Block Diagram

Figure 17: USB Block Diagram


USB Device (Midspan)
Internal Function
USB Port (PC)
Connects USB Port (PC) to device (Midspan) via USB Cable
The PC automatically detects the newly installed hardware. This function is called **Plug & Play**, available with a USB connection
Internal USB device (Midspan) sends a signal to your PC, creating a **"Virtual COM Port."** A Virtual COM Port corresponds to a serial communication port.
The PC quickly identifies the connection as **Serial Com**. Windows will automatically install your device on an available serial COM port. Changes may be made via Device Manager. Section 3.2 discusses Device Manager.
Wait for the PC to respond

Note: Assume USB-to-Serial-Com Port driver is installed. Users' PC will automatically detect the newly installed/connected hardware.

4. Midspan GUI

The firmware is supplied with a Graphical User Interface (GUI), which is used to configure and manage the PoE midspan system. If you have successfully installed the Phihong GUI and USB driver – Please locate the Phihong Midspan POE GUI on your desktop or from your Start Menu.

4.1 GUI Main Window

Step 1: Choose connection type

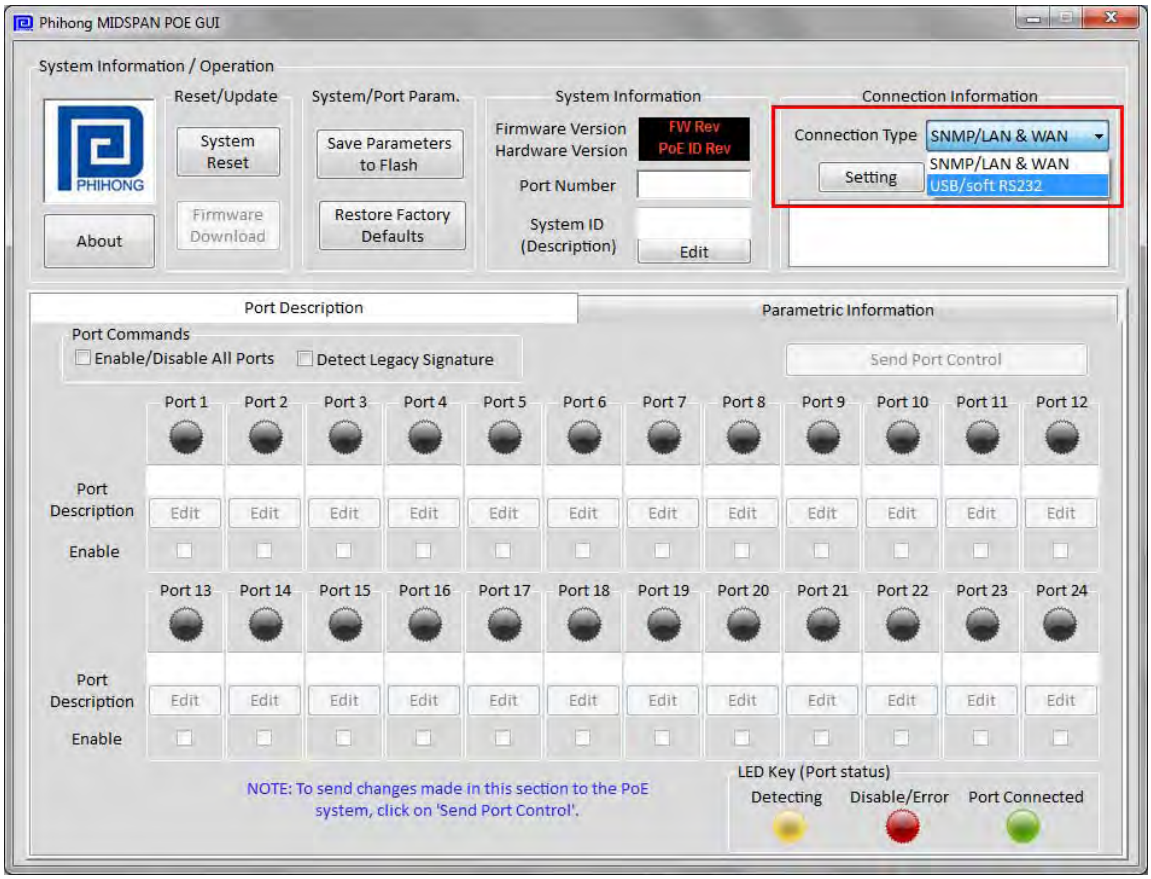


Figure 18: GUI Main Window

Step 2: A Com Port number will be selected automatically, then press Search POE and highlight the midspan

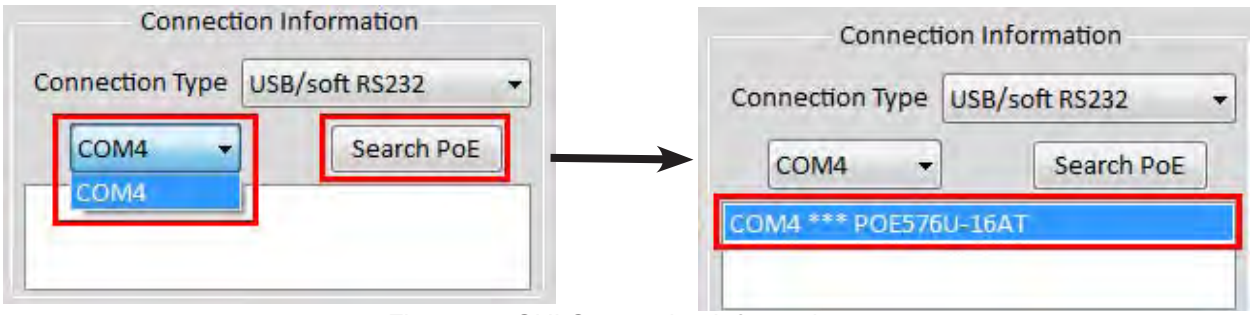
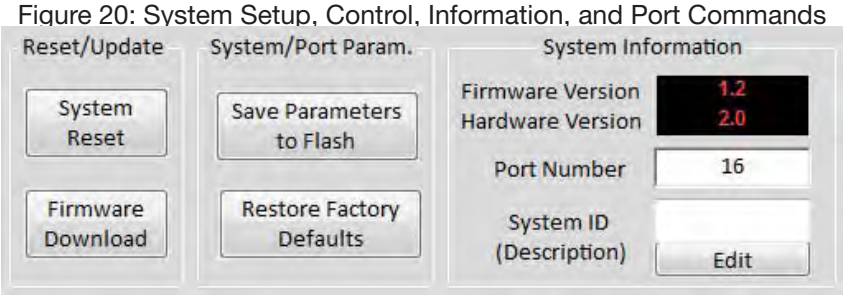


Figure 19: GUI Connection Information

4.2 GUI System Control and Information:

The System Control and Information panel on the GUI supports the main system level parameters for the µP. It also displays information about the PoE ID, firmware revision and system status.

Figure 20: System Setup, Control, Information, and Port Commands



The system level parameters that can be configured are:

- *System Reset* – This is a function that allows the GUI to reset the software on the µP. (If System Reset is set and the GUI does not respond, user must click "Reset GUI")
- *Firmware Download* – This feature is used to download new application/firmware codes onto the µP. Please refer to the Phihong website www.midspans.com for the latest firmware for your midspan – **POE Firmware.**

Note: Please allow the GUI a few seconds to respond to the commands selected. DO NOT click or check any commands simultaneously. If a command is selected more than once within two seconds, the GUI may not respond properly.

The "**Save Parameters to Flash**" button will save system and port parameters to flash memory, so that they can be used to the firmware across reboots of the µP.

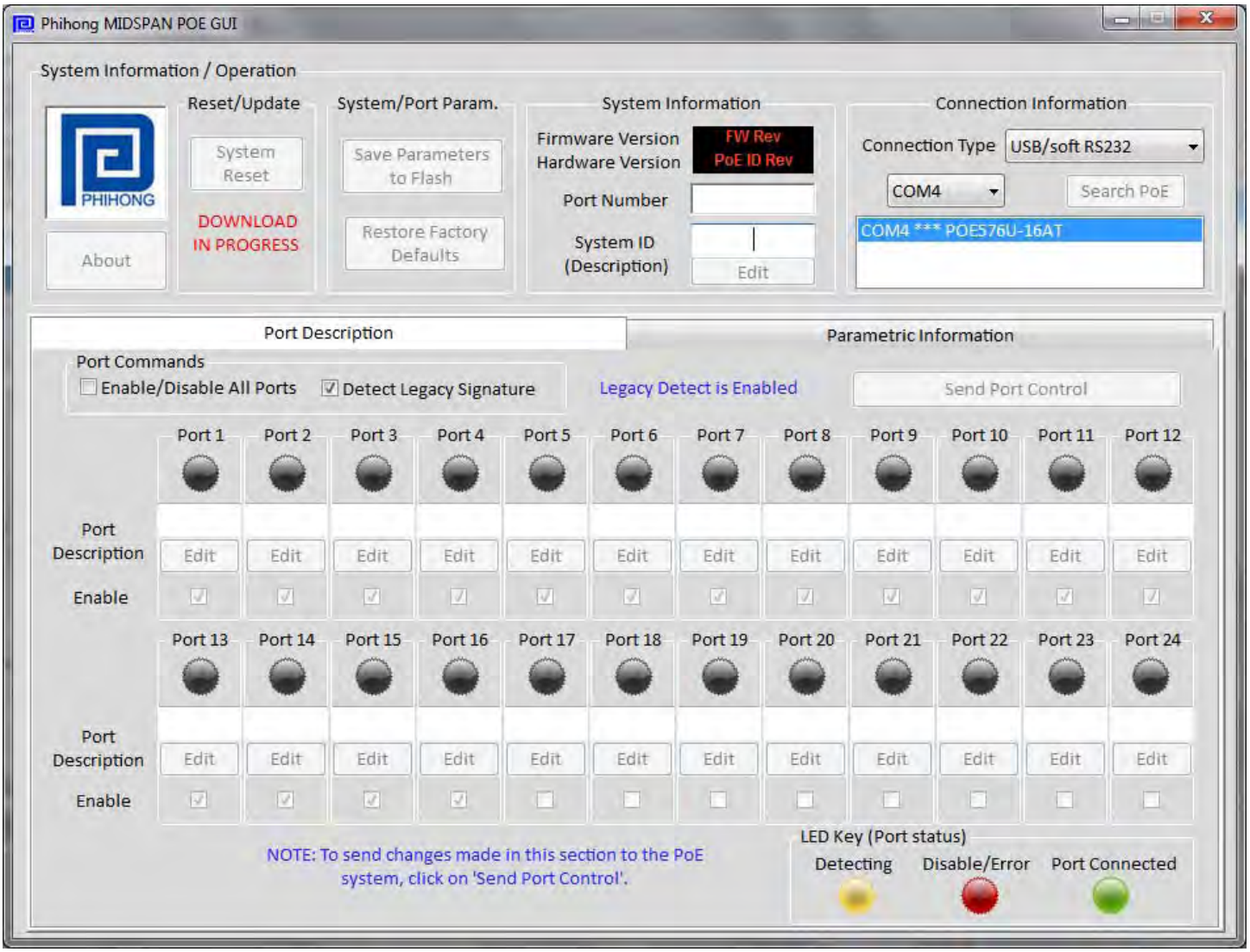
The "Restore Factory Defaults" button will reset the defaults in the firmware, and clear any stored data in the flash memory, the device will reset automatically. After the device has successfully reset, the "System Status" will read "0." Click "Reset GUI" if necessary. **To make the factory defaults permanent, the user must click "Save Parameters to Flash."**

The System ID field specifies the hardware revision of the PoE device. The firmware version is represented in a major/minor format.

System ID/Name – click "Edit" to edit/change the description of the system. If you click "Cancel", the previous description will be set for the system. **To make this permanent the user must click "Save Parameters to Flash."**

During the ‘Download In Progress’, the GUI function buttons will be temporarily disabled.

Figure 21: System Update



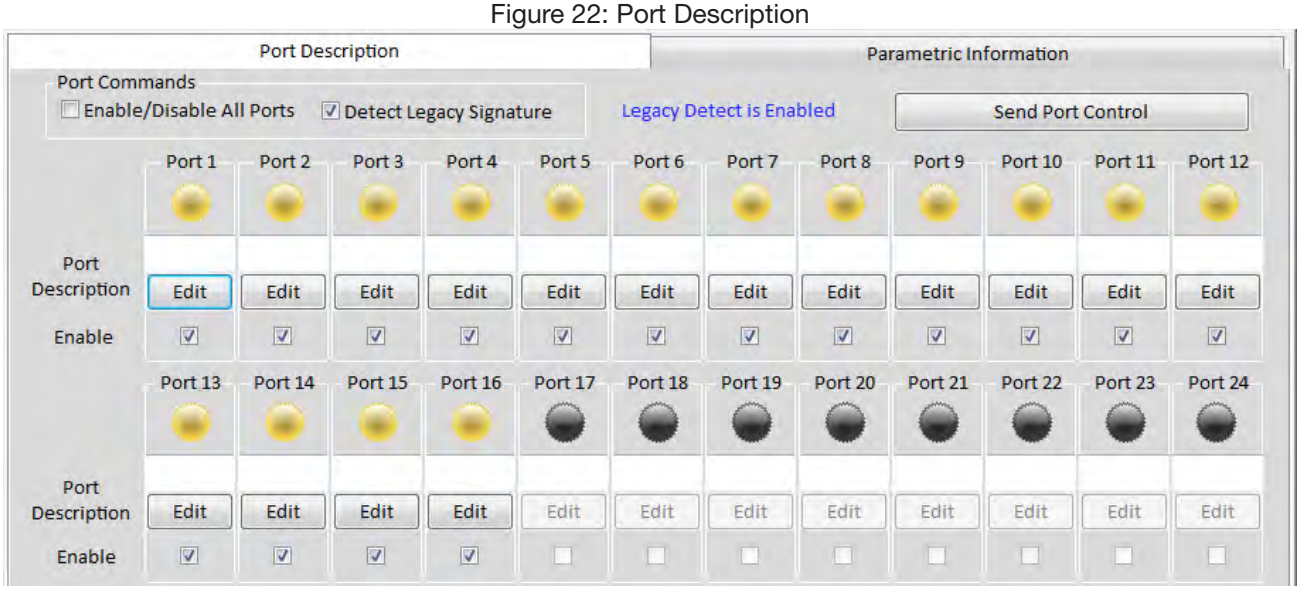
Example of the firmware file:

95ATMSP4300-R12-1.2.S99 78,036 27,286 File S99 11/9/2009 2:33 ... 82A57ACF

4.3 GUI Port Description:

The Port Description panel shows 24-ports. On the PoE Midspans that have 8 or 16-ports, the port numbers higher than the system port count will be shaded grey and disabled. Each section specifies the individual port descriptions for the system.

Figure 22: Port Description



Changes to the port configuration in this section can be enacted when the user clicks the "**Send Port Control**" button. It will send the port information to the µP for 24-Ports. Please allow the GUI 10 seconds to refresh when this action is taken.

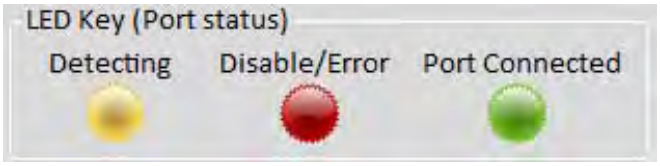
Port Description – Click "Edit" to edit/change the description of the port. Click "OK" to set description on the GUI screen. If you click "Cancel", the previous description will be set for that particular port. **Click "Send Port Control" to send the descriptions to the system. To make this permanent, the user must click "Save Parameters to Flash."**

Enable – This check box can administratively enable or disable the selected port. If "Enable/Disable All Port" check box is selected, all ports will be enabled. Initially, the check box is not checked, but by default all ports are enabled. **Click "Send Port Control" to send the command to the system. To make this permanent, the user must click "Save Parameters to Flash."**

If "*Detect Legacy Signature*" check box is selected, all ports are enabled and the firmware will try to detect legacy devices. By default, legacy detection is disabled. The message in blue states that the "Legacy Detect is Enabled" (Figure 16). **Click "Send Port Control" to send the command to the system. To make this permanent, the user must click "Save Parameters to Flash."**

The different colored LEDs show the status of the individual ports. A ‘Yellow’ LED shows the port is detecting or ready to be connected. A ‘Red’ LED shows the port as Disable/Error. A ‘Green’ LED shows that the port is connected to a compliant load.

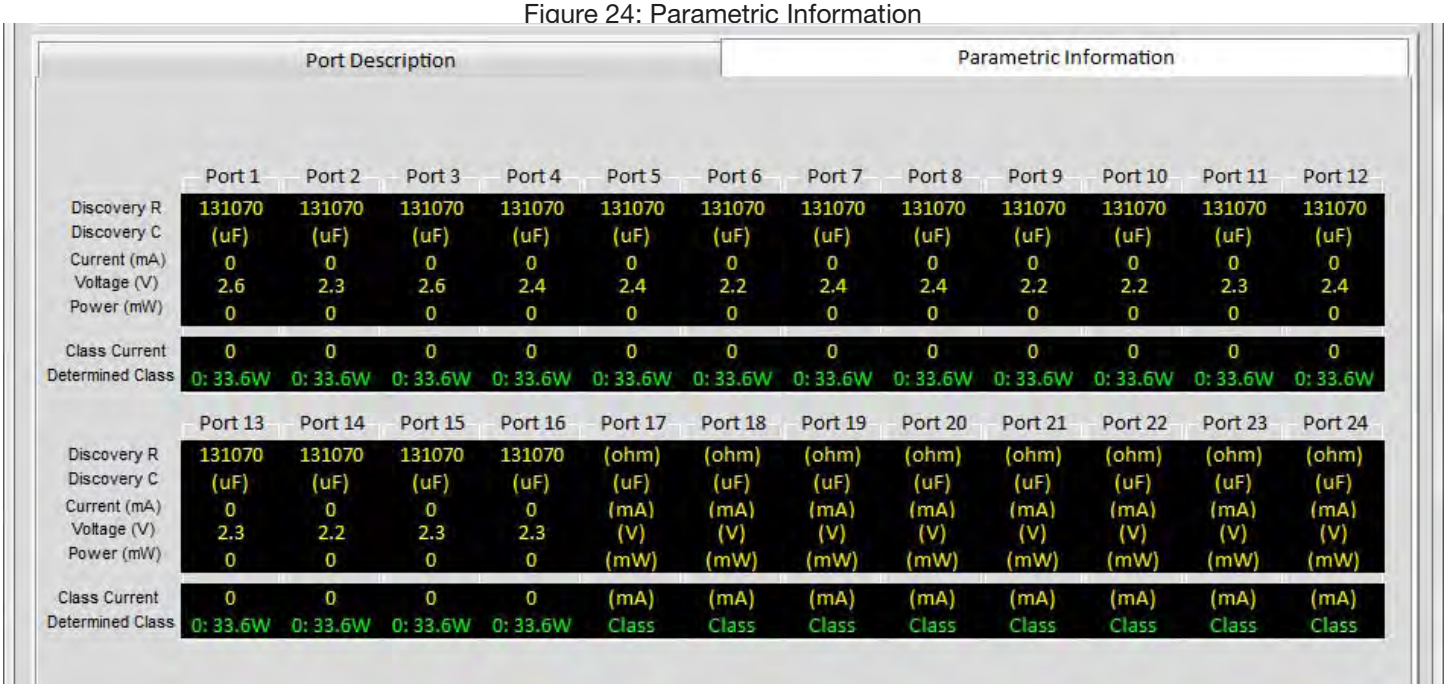
Figure 23: LED key (Port Status)



4.4 GUI Parametric Information:

This section allows users to review, but not edit, Parametric Information for each port.

Figure 24: Parametric Information


Port Description
Parametric Information
Port 1 Port 2 Port 3 Port 4 Port 5 Port 6 Port 7 Port 8 Port 9 Port 10 Port 11 Port 12
Discovery R 131070 131070 131070 131070 131070 131070 131070 131070 131070 131070 131070 131070
Discovery C (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF)
Current (mA) 0 0 0 0 0 0 0 0 0 0 0 0
Voltage (V) 2.6 2.3 2.6 2.4 2.4 2.2 2.4 2.4 2.2 2.2 2.3 2.4
Power (mW) 0 0 0 0 0 0 0 0 0 0 0 0
Class Current 0 0 0 0 0 0 0 0 0 0 0 0
Determined Class 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W
Port 13 Port 14 Port 15 Port 16 Port 17 Port 18 Port 19 Port 20 Port 21 Port 22 Port 23 Port 24
Discovery R 131070 131070 131070 131070 (ohm) (ohm) (ohm) (ohm) (ohm) (ohm) (ohm) (ohm)
Discovery C (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF) (uF)
Current (mA) 0 0 0 0 (mA) (mA) (mA) (mA) (mA) (mA) (mA) (mA)
Voltage (V) 2.3 2.2 2.3 2.3 (V) (V) (V) (V) (V) (V) (V) (V)
Power (mW) 0 0 0 0 (mW) (mW) (mW) (mW) (mW) (mW) (mW) (mW)
Class Current 0 0 0 0 (mA) (mA) (mA) (mA) (mA) (mA) (mA) (mA)
Determined Class 0: 33.6W 0: 33.6W 0: 33.6W 0: 33.6W Class Class Class Class Class Class Class Class

The Port Parametric Information panel has the following set of parameters that are displayed:

- Discovery R (ohms) – This value represents the discovered resistance (R) of the port in ohms.
- Current (mA) – This value represents the current (I) of the port in milliamperes
- Voltage (V) – This value represents the voltage (V) of the port.
- Power (mW) – This value represents the power of the port in milliwatts.
- Class Current (mA) – This value represents the class current of the port in milliamperes.
- Determined Class – This value represents the class of the discovered device.

Note: If the ports are less than 24-ports for the system those ports greater than the total system port count will read all zeros “0”. In the figure above, Port 1 is connected to a compliant load while Ports 2-24 are ready to be connected.

5. Midspan Troubleshooting:

If problems occur with the Midspan, verify the following:

The troubleshooting solutions provided can only solve minor problems. If your problem is not listed, please contact our Phihong Sales for further technical assistance. All up-to-date contact information can be found on our website www.phihong.com.

Table 3: Troubleshooting

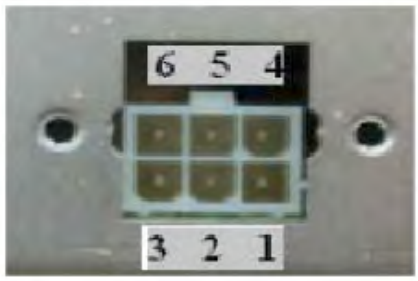
Problem	Possible Solutions
Midspan does not power up	1. Assure that the AC power cord is connected 2. Assure that the AC power cord is in good condition 3. If solutions 1 & 2 are true; then disconnect the AC power cord and reconnect. Observe the Port LEDs to verify a proper power up.
AC LED not lit	Verify Midspan is properly connected to an AC power source
Port LED do not light 'Green'	1. Port maybe disabled and needs to be enabled using the GUI. Ensure Ports are enabled, then 'Save Flash Parameters.' 2. Assure Ports are connected to a Network
The GUI window does not update port status.	Click 'System Reset' and wait for the System to Reboot
Others. Please verify the following:	1. Power is applied to the Midspan. 2. The network Ethernet cable is connected to the Data port. 3. The power device Ethernet cable is connected to the Data & Power port. 4. Proper type of Ethernet cable is used; do not use crossover-type Ethernet cable. 5. Cable pairs are connected to corresponding ports.

Visit digikey.com

Appendix A: Optional RPS – option R

Please contact Phihong Sales for more information

Figure 25: DC Power Connector



DC Power Connector

Pin	Description
1	+47VDC to +57VDC
2	Current Share
3	-47VDC to -57VDC
4	+47VDC to +57VDC
5	Not Used
6	-47VDC to -57VDC

DC IN:Molex, 6 pin p/n 39-30-0060 or equivalent
DC IN Mate: Molex, 39-01-2065, pin p/n 39-00-0077

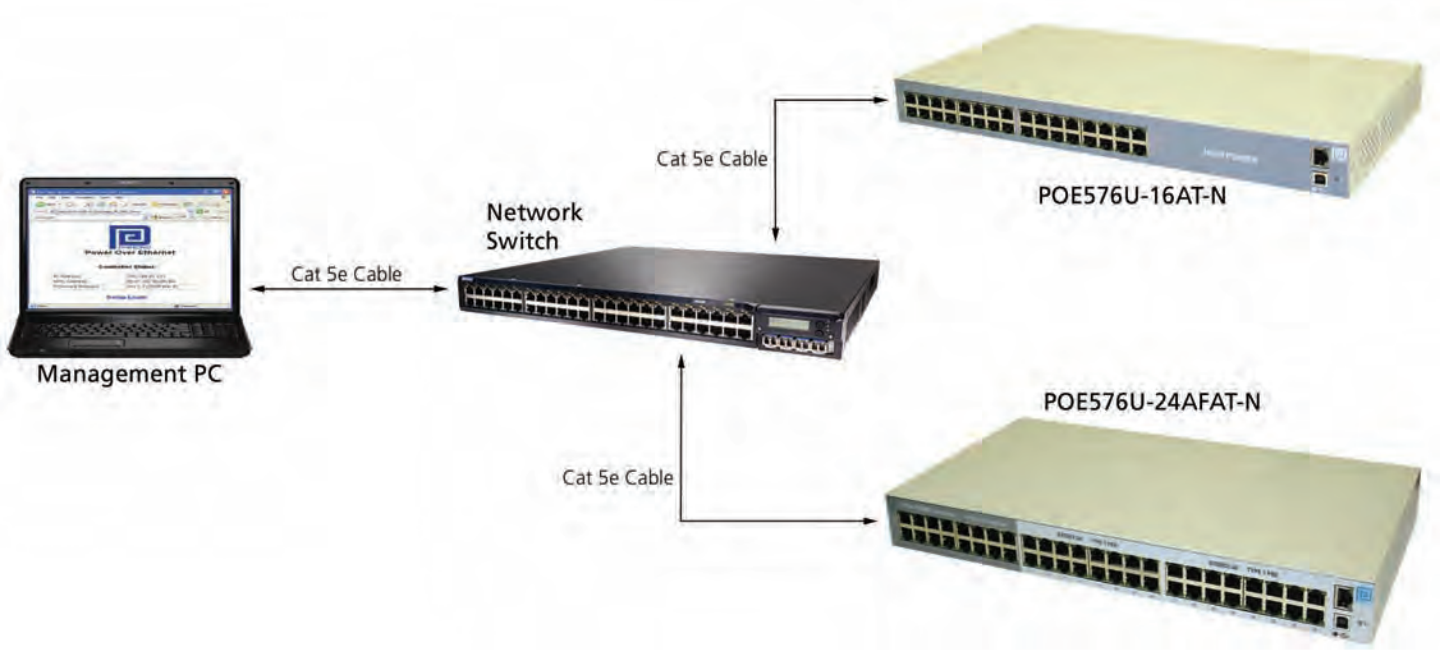
Table 4: DC Specifications

Parameters	**Specifications**		
DC Input Voltage Range (-R option)	47VDC to 57VDC		
DC Input Current	POE370U	POE576U	
	8.7A max	14A Max	
Output power, per port	POE370U	15.4W	
	POE576U-AT	33.6W	
	POE576U-AFAT	Ports 1-8: 33.6W / 9-24: 15.4W	
Total Output Power supported	No. of Ports		
	-8	-16	-24
POE370U	125W	250W	370W
POE576U-AT	269W	538W	N/A
POE576U-AFAT	N/A	N/A	515W

Appendix B: Optional NIC Interface – Option N

PC-to-Network-to-Midspan:

Figure 26: PC-to-Network-to-Midspan Diagram



1. NIC Interface Setup:

NOTE: Assure the connection path between your PC and the Midspan. Skip **Step 1** if you with to use our **Phihong GUI** to communicate with the Midspan.

1. Visit www.midspans.com to download the latest **SNMP MIB for the NIC interface**.

   Example **SNMP MIB** file (please check our website for updates):

   phihong060809.txt 13 KB Text Document 8/9/2006 9:11 AM

   If you choose to use your own SNMP console, please rename the SNMP MIB text file to the file extension that matches your SNMP Console. Follow the instructions for your SNMP Console to install the MIB file.

   Please check the Phihong website (www.midspans.com) occasionally for the latest updates for the MIB and SNMP Firmware.

   Example of a SNMP Firmware file (please check out website for updates):

   0608095973-b14-3.bin 58 KB BIN File 8/9/2006 9:11 AM

2. Visit www.midspans.com to download the Ethernet Manager tool (**etm.exe**). **Etm.exe** is a Device Management Utility that runs under the Windows 32 bit environment and is used to setup the IP address, subnet mask, and MAC address of your SNMP device. For more advanced setup settings, use Internet Explorer or another Internet Browser.

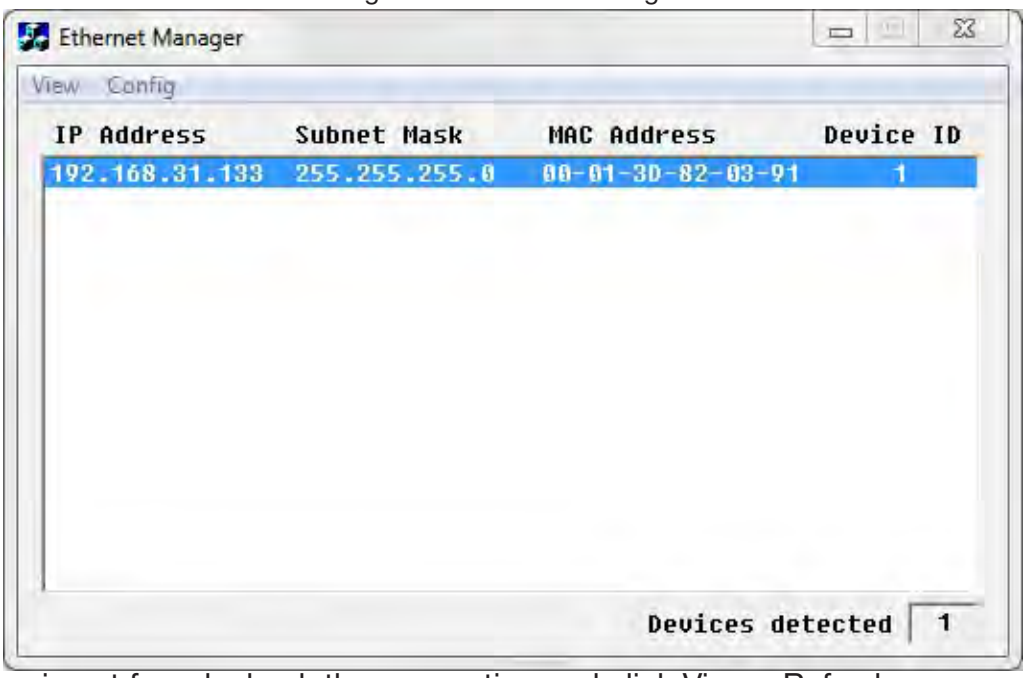
NOTE: Your IP Address may be different from the example shown below

3. Execute **etm.exe**

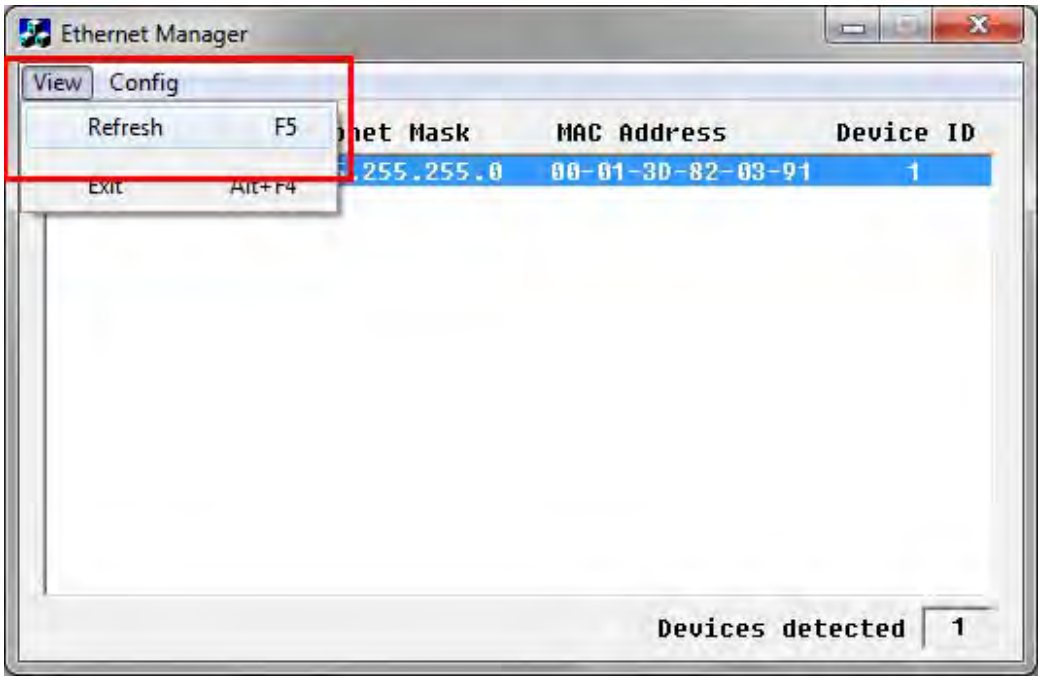
Ethernet Manager tool

4. Assuming the connection path between your PC and the Midspan is adequate; the Ethernet Manager tool will detect your SNMP device.

Figure 27: Ethernet Manager



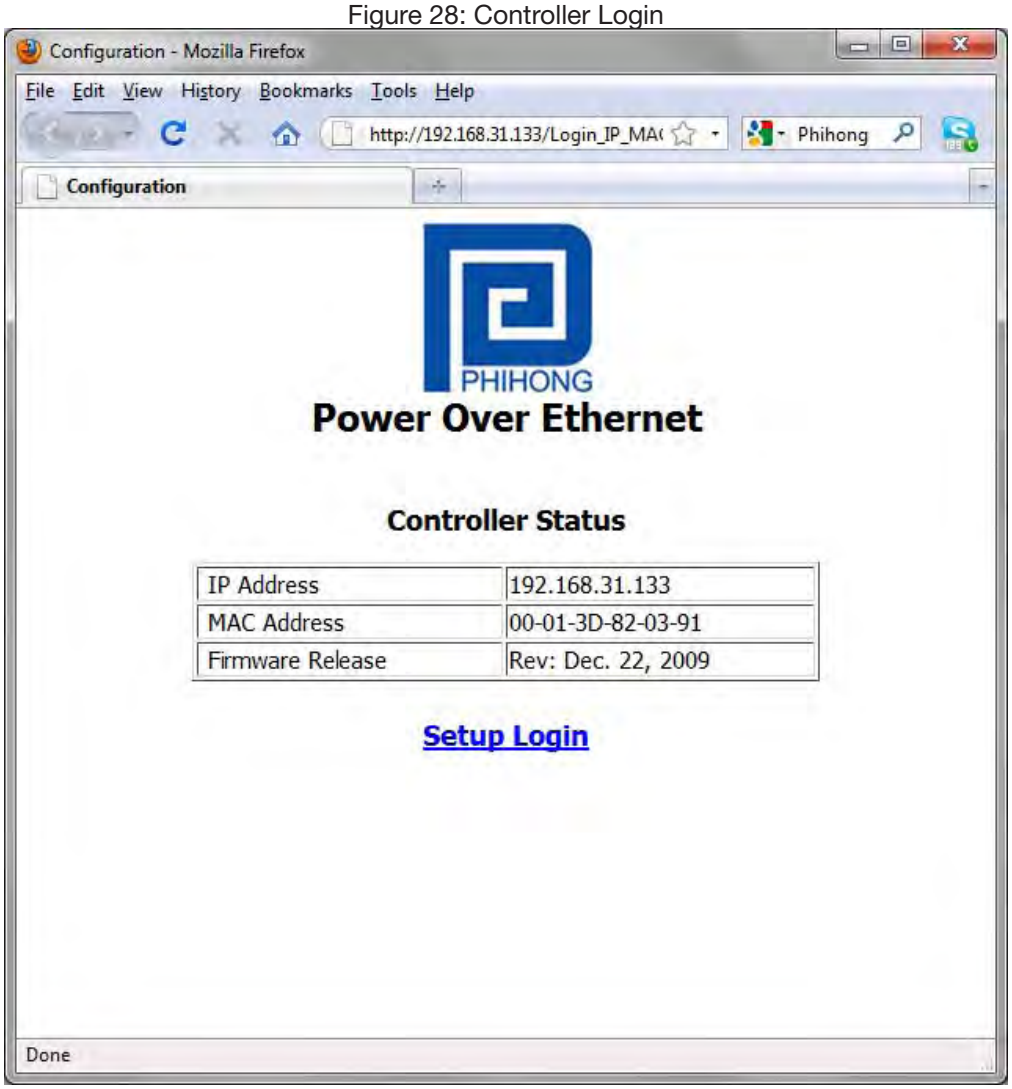
5. If your device is not found, check the connection and click View » Refresh



2. Advanced Setup Options

For Advanced Setup Configuration: click Config » Device Settings OR type the IP address in your Internet Browser. Your Internet Browser will open with the following window:

Figure 28: Controller Login



Click Setup Login
Default User: admin
Default Password: (leave area blank)

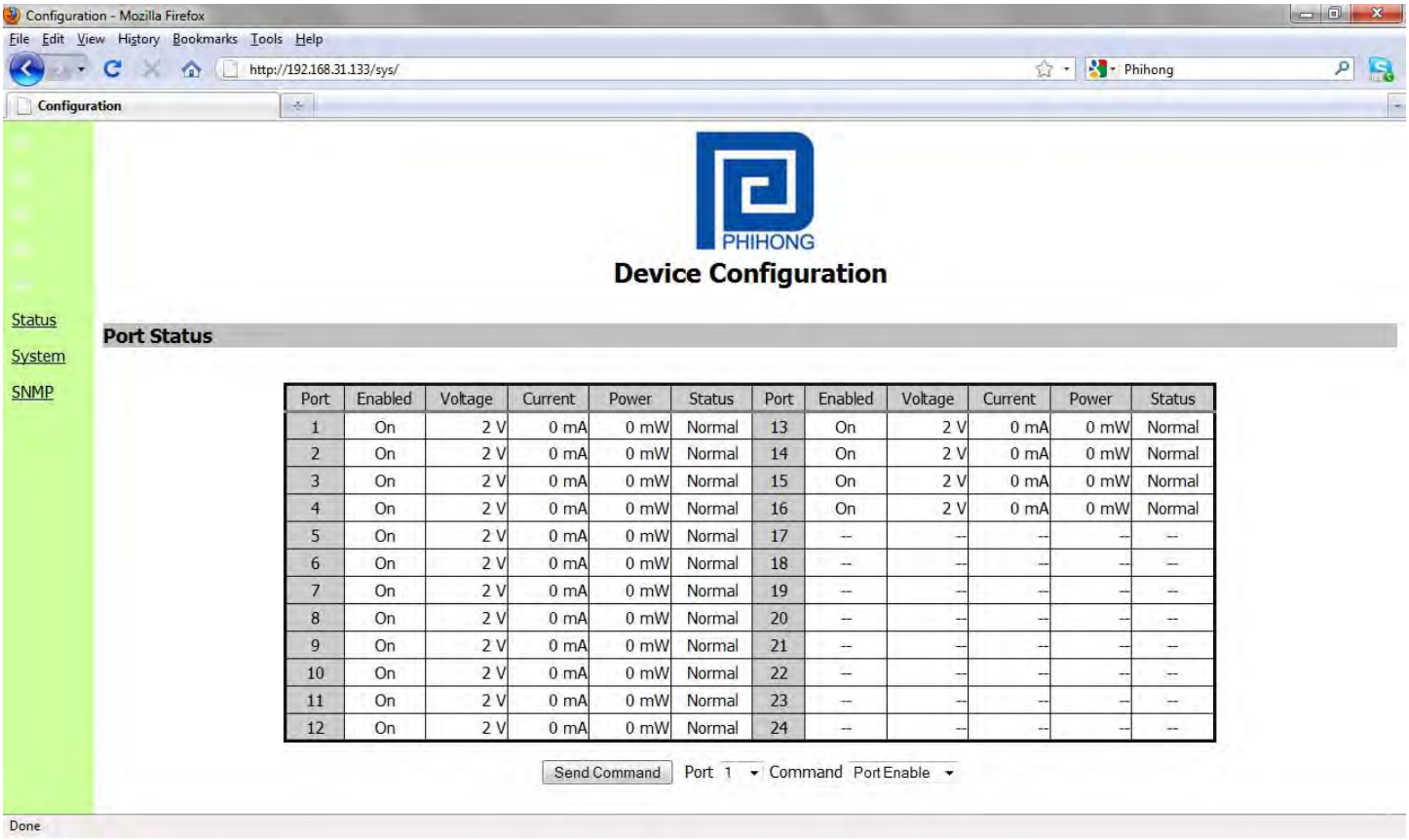
NOTE: If you forget your login password, please contact Phihong Sales for further instructions. For up-to-date contact information please visit our website www.phihong.com.

Users need to be aware that the Username and Password are both Case Sensitive!!

If the login screen is not the one featured above but a blue screen then please see the manual specific to SNMPv2 which can be found on the website www.midspans.com/support as the login information and controller settings are not the same.

3. Controller Setup

Figure 29: Controller Main Window



Port	Enabled	Voltage	Current	Power	Status	Port	Enabled	Voltage	Current	Power	Status
1	On	2 V	0 mA	0 mW	Normal	13	On	2 V	0 mA	0 mW	Normal
2	On	2 V	0 mA	0 mW	Normal	14	On	2 V	0 mA	0 mW	Normal
3	On	2 V	0 mA	0 mW	Normal	15	On	2 V	0 mA	0 mW	Normal
4	On	2 V	0 mA	0 mW	Normal	16	On	2 V	0 mA	0 mW	Normal
5	On	2 V	0 mA	0 mW	Normal	17	--	--	--	--	--
6	On	2 V	0 mA	0 mW	Normal	18	--	--	--	--	--
7	On	2 V	0 mA	0 mW	Normal	19	--	--	--	--	--
8	On	2 V	0 mA	0 mW	Normal	20	--	--	--	--	--
9	On	2 V	0 mA	0 mW	Normal	21	--	--	--	--	--
10	On	2 V	0 mA	0 mW	Normal	22	--	--	--	--	--
11	On	2 V	0 mA	0 mW	Normal	23	--	--	--	--	--
12	On	2 V	0 mA	0 mW	Normal	24	--	--	--	--	--

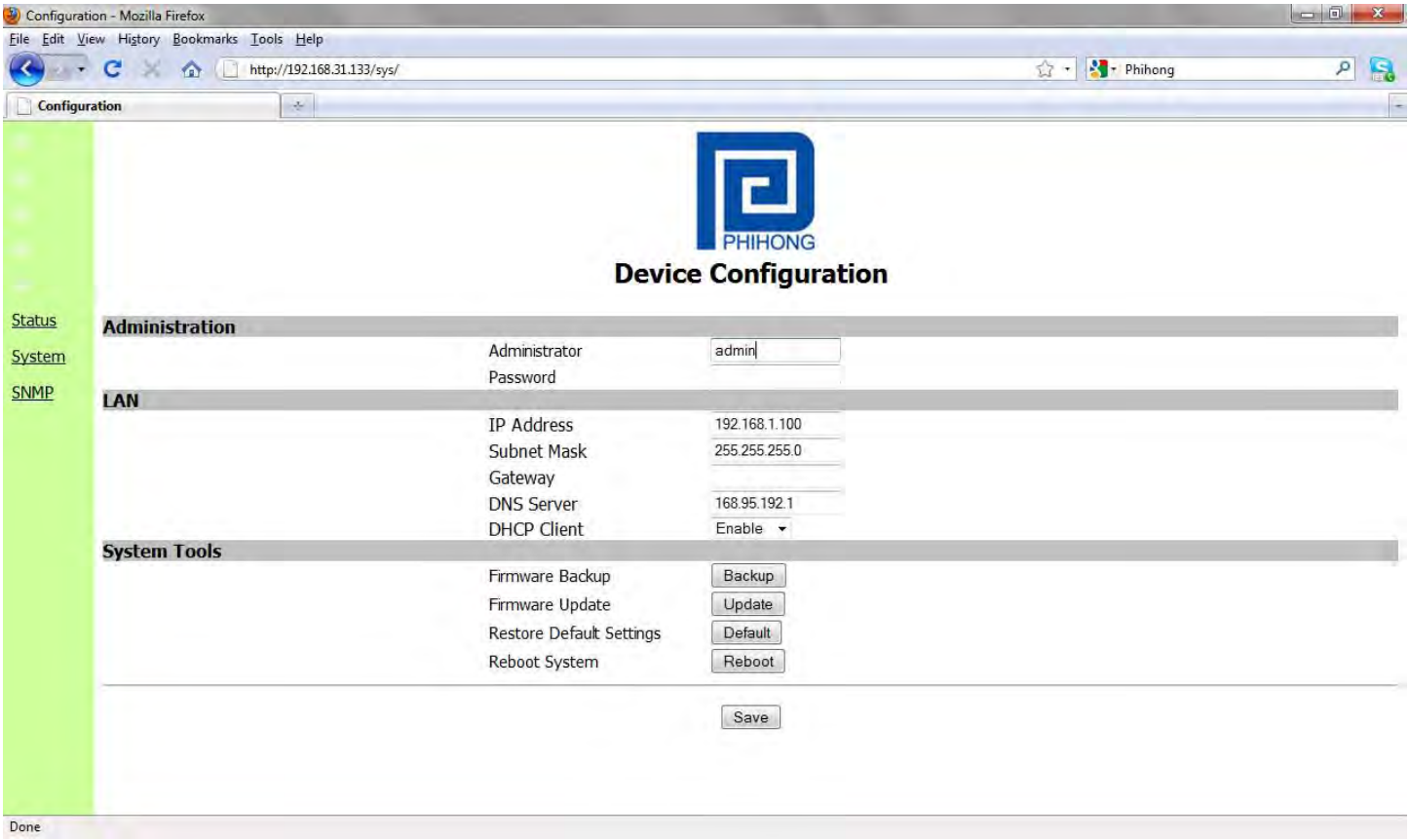
Port Status:

The main window of the controller is a simple GUI that allows the user to enable and disable midspan ports. It is also a limited display of parametric information. A more complete list of parametric information is available using Phihong's GUI software available on the website www.midspans.com.

Visit digikey.com

3.1 System Administration

Figure 30: Controller System Administration



NOTE: If you change the Administrator name and password, users should ensure that it is written down in safe place for reference.

Click Save to make any changes permanent.

Ok. Settings have been saved successfully

Back Reboot

Click Reboot to reboot the system with the new changes. This may take a few minutes depending on the connection speed. Check the Midspan IP Address again as it may have change depending on the user settings for **DHCP Client**.

Click Back to review or make additional changes.

Configuration Description

Table 5: Controller Setup

Controller Setup		
	Default Settings	**Description**
Administrator	Admin	The login administrator is a user defined name that is used at login. Please write down your new login name in a safe location for future use.
Password	(Blank)	The login password can be empty or 1-14 characters long. Please write down your new password in a safe location for future use. The password is also used while performing SNMP Firmware updates.
IP Address	192.168.1.111	Four groups of numbers assigned by the network server (DHCP mode Enabled) or User defined (DHCP mode disabled)
Subnet mask	255.255.255.0	Four groups of numbers assigned by the Network server (DHCP mode enabled) or user defined (DHCP mode disabled)
Gateway address	192.168.0.1	Four groups of numbers assigned by the Network server (DHCP mode enabled) or user defined (DHCP mode disabled)
DNS Server	168.95.192.1	Four groups of numbers assigned to the network server
DHCP Client	Enable	The default setting (Enable) sets the DHCP client in Dynamic mode. Dynamic mode allows the Network server to automatically assign the IP address, subnet mask, and Gateway address. If the DHCP client is set to disable the DHCP client is set to Static mode. Static mode allows the user to manual assign the IP address, subnet mask, and Gateway Address. Note: If the user manually assigns the IP address, the DHCP client must be set to Disable.

System Tools

Firmware Backup – click the **Backup** button and you will get a pop-up to save a BIN file of the current Firmware and settings. Save in a location that will be easy for you to remember and the file may be renamed to user specifications.

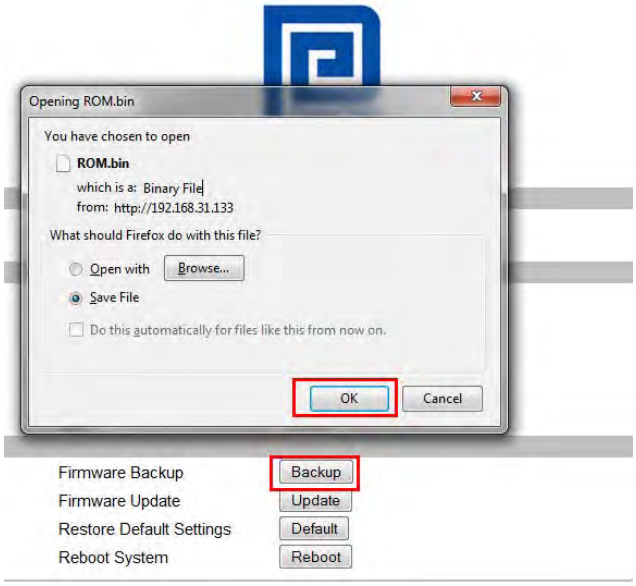
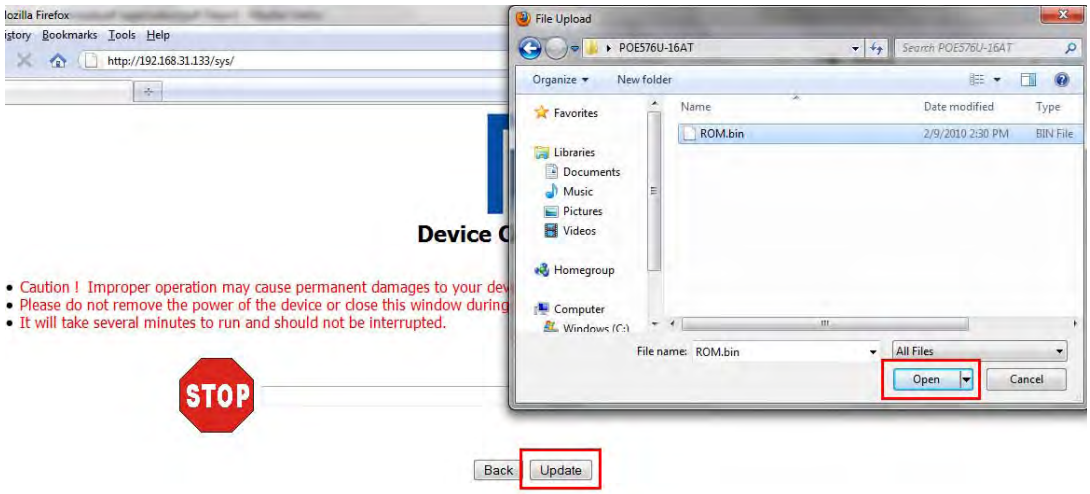


Figure 31: Controller Firmware Backup

Firmware Update – click Update to install the most recent firmware for your midspan or to re-install a firmware that was backed-up. Before proceeding with this step, users should ensure that the connection between the PC and Midspan is secure and will not be interrupted as this may take a few minutes.

Figure 32: Controller Firmware Update



Click **browse** then locate your firmware file (it will have a **.bin** file extension). Then click **update**.

Firmware file example:

ROM.bin 4,096 KB BIN File 7/29/2009 10:42 AM

Visit digikey.com

SNMP Firmware (version 2 and version 3) is also posted to the support section of www.phihong.com and www.midspans.com. Please check the revision date from the login screen of the controller (review sections 2 and 3 for more information) to the date of the firmware posted on the phihong website(s). If the dates are not the same it is recommended that users follow the above section on Firmware Update to ensure their midspan is operating with the most current software. Users need also be aware of the version of SNMP card currently installed on their midspan. The firmware for SNMPv3 may not be installed on a midspan with a SNMPv2 card and vice versa.

Restore Default Settings – This function is used to revert back to the default settings for the Firmware. This will undo any changes that you've so far made to the Firmware configuration. After using this function users will have the option to go back or to reboot their system.

Reboot System – This function will reboot the system. This screen will display:

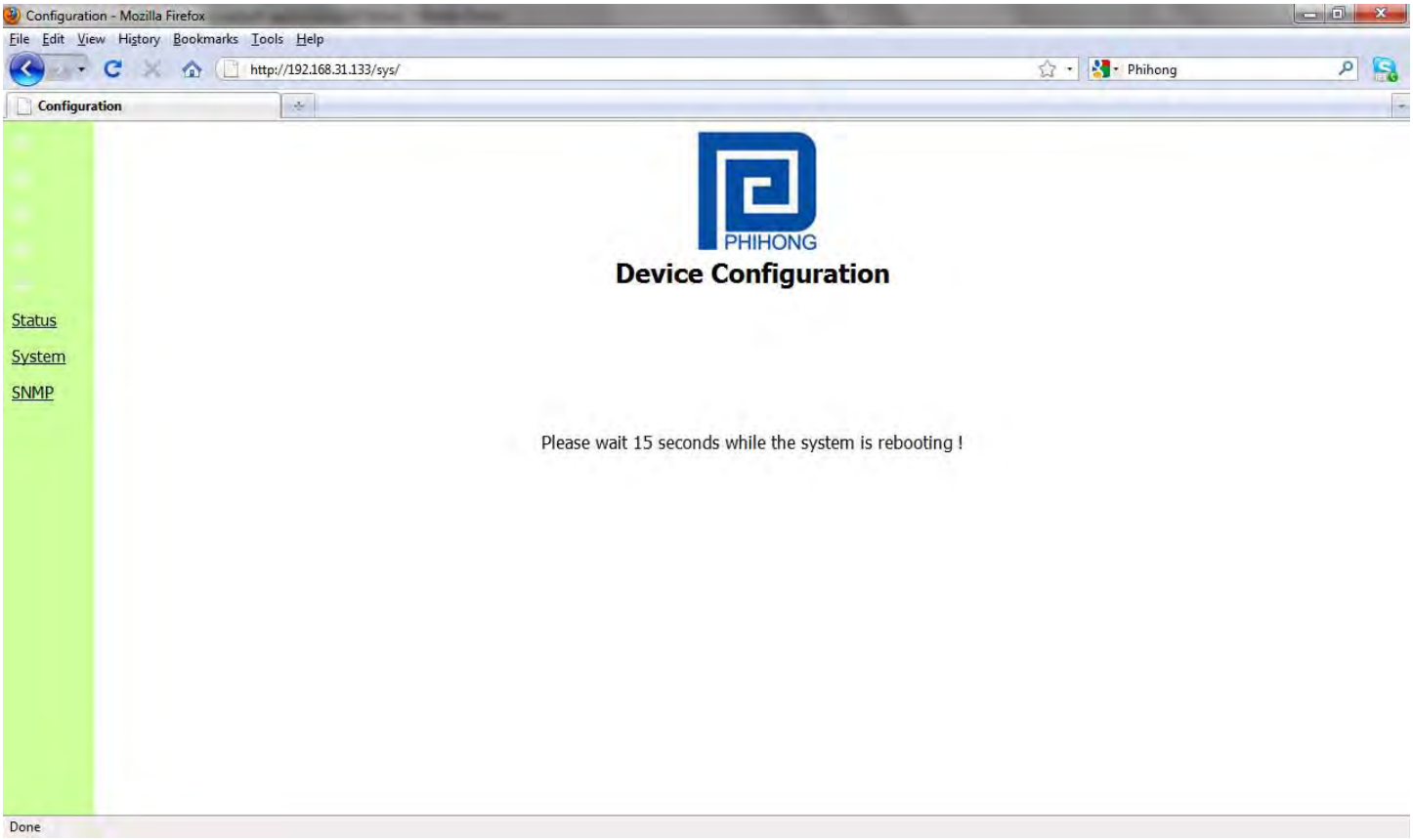


Figure 33: Reboot System

Once the system has finished rebooting it will revert back to the GUI Main Screen.

3.2 SNMP Settings

The new SNMP v3 has added security features that were not found on previous versions of the management protocol. These include additional password protection.

Figure 34: Controller SNMP Settings

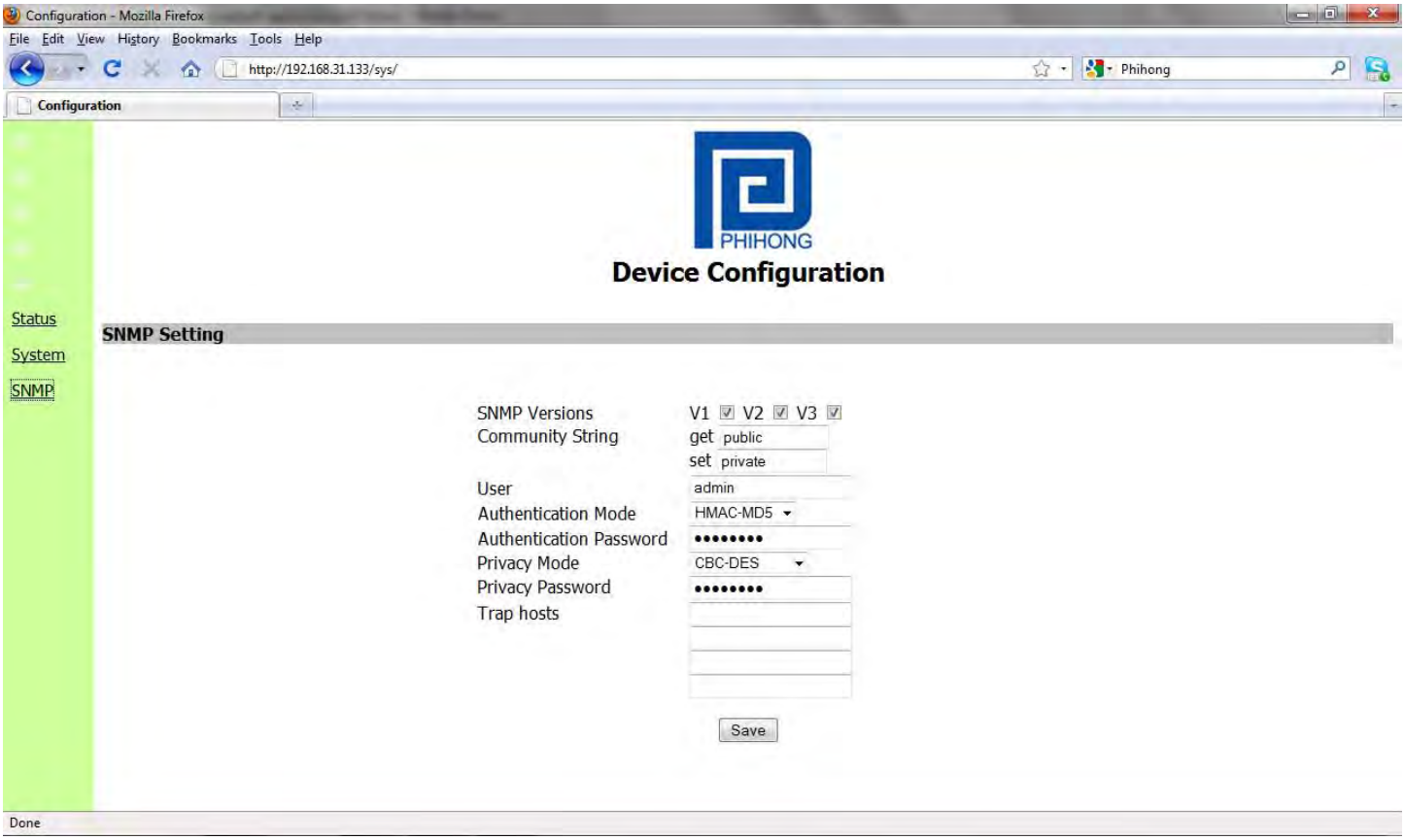


Table 6: SNMP Settings

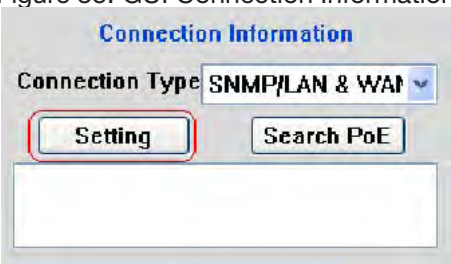
SNMP Settings		
	Default Setting	**Description**
SNMP Versions	V1/V2/V3	This function describes the current version of SNMP management that the user is running. This version is V3.
Get Community String	Public	Option to set to public or private
Set Community String	Private	Option to set to public or private
User	Admin	Logon name that may be defined by the user. If changed the information should be written in a safe place for future reference
Authentication Mode	HMAC-MD5	Option to set encryption to HMAC-MD5 or HMAC-SHA1
Authentication Password	12345678	User defined password may be left to the default setting or 1-18 characters in length. If changed the information should be written in a safe place for future reference. This option may be used in place of the Community Strings for SNMPv3 Access via Midspan POE GUI (see below).

Privacy Mode	CBC-DES	Option to set privacy encryption to CDC-DES or CFB-AES-128
Privacy Password	12345678	User defined password may be left to the default setting or 1-18 characters in length. If changed the information should be written in a safe place for future reference. This option may be used in place of the Community Strings for SNMPv3 Access via Midspan POE GUI (see below).
Trap Hosts	0.0.0.0	Trap Hosts are the destination IP addresses that you want the Traps to be sent to.
	0.0.0.0	
	0.0.0.0	
	0.0.0.0	

NOTE: Trap Notifications are black from entering through the Windows Firewall. Please configure the Windows Firewall settings to allow incoming Network Connections, by adding a specific program (i.e. the SNMP Console).

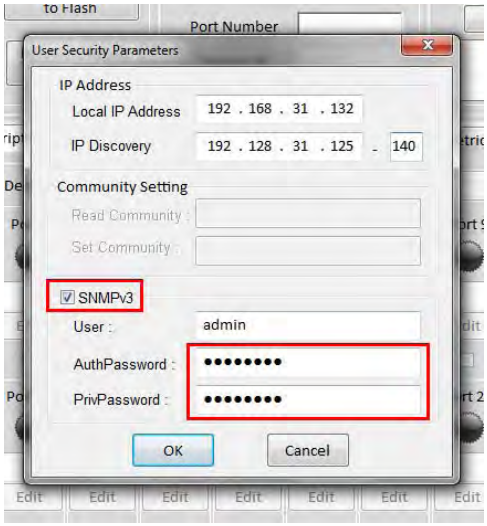
If the user is using the Authentication and Privacy passwords, they must remember these to use the Phihong GUI. Open the Phihong GUI and locate and click **setting**.

Figure 35: GUI Connection Information



A pop-up for the **User Security Parameters** will allow you to enter the correct IP Address of your midspan. If the user is using the **Authentication** and **Privacy Passwords** ensure that **SNMPv3** is checked and enter in the correct passwords in the spaces provided. **The default passwords for both are: 12345678**. Ensure that the User also matches the name entered in the Controller Setup.

Figure 36: GUI User Security Parameters



Default Settings

User: admin
AuthPassword: 12345678
PrivPassword: 12345678

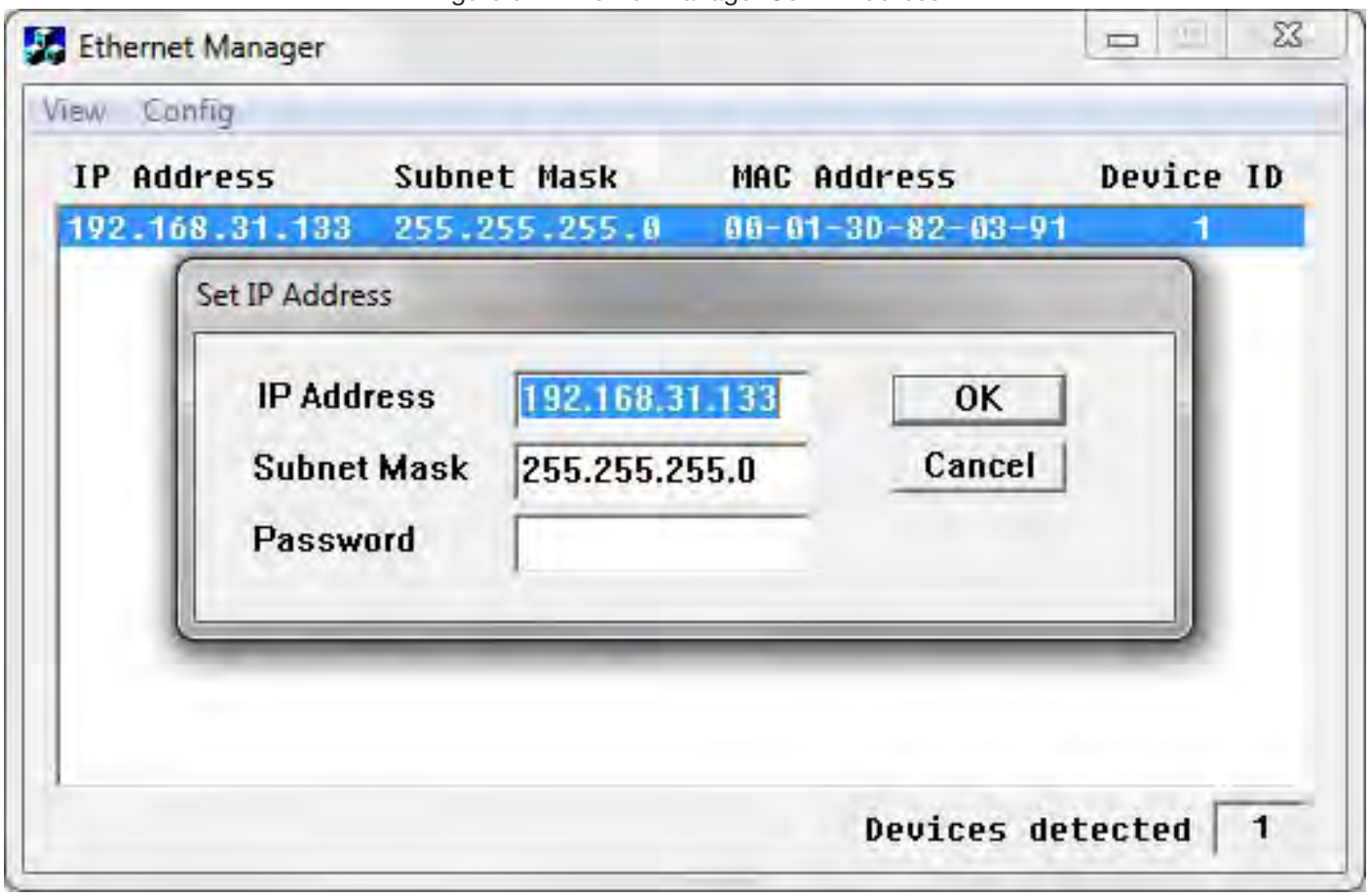
User and Passwords are both case sensitive.

If you wish to run your SNMP device in Static mode, you can also configure your IP Address and Subnet Mask through the Ethernet Manager tool (**etm.exe**).

Click Config » IP Address

NOTE: From the **System Setup** menu in the Controller, your **DHCP Client** setting must be **Disable**.

Figure 37: Ethernet Manager Set IP Address



4. DHCP Client – Dynamic or Static Mode

Check your Local Area Connection Status:

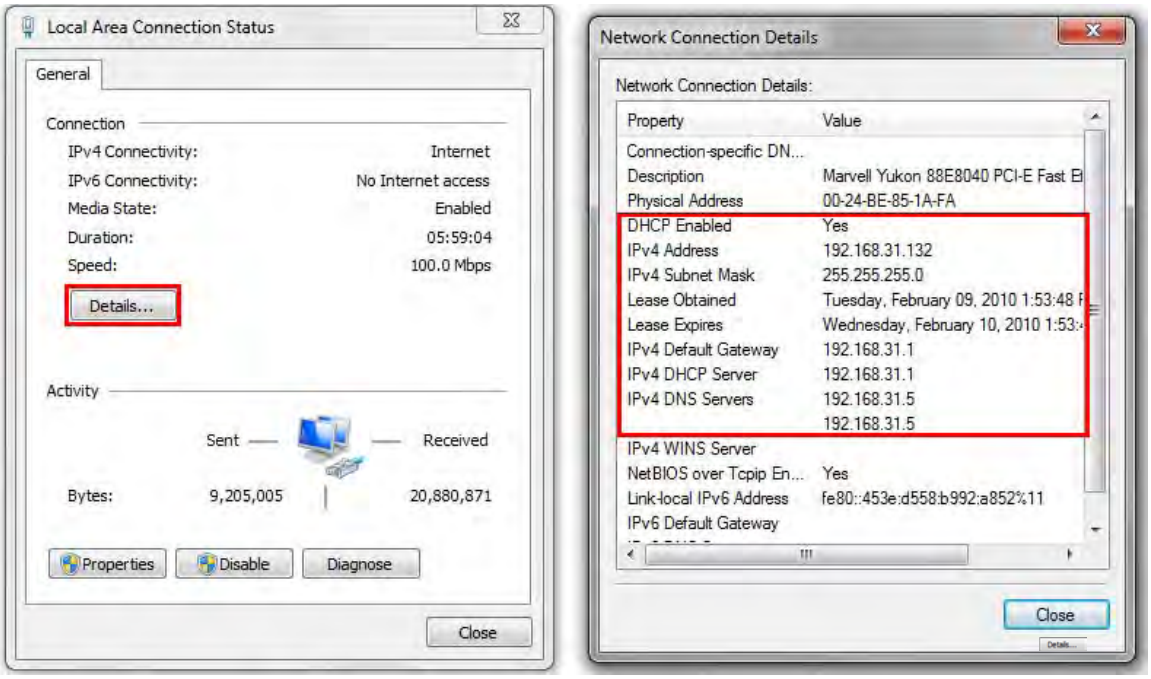
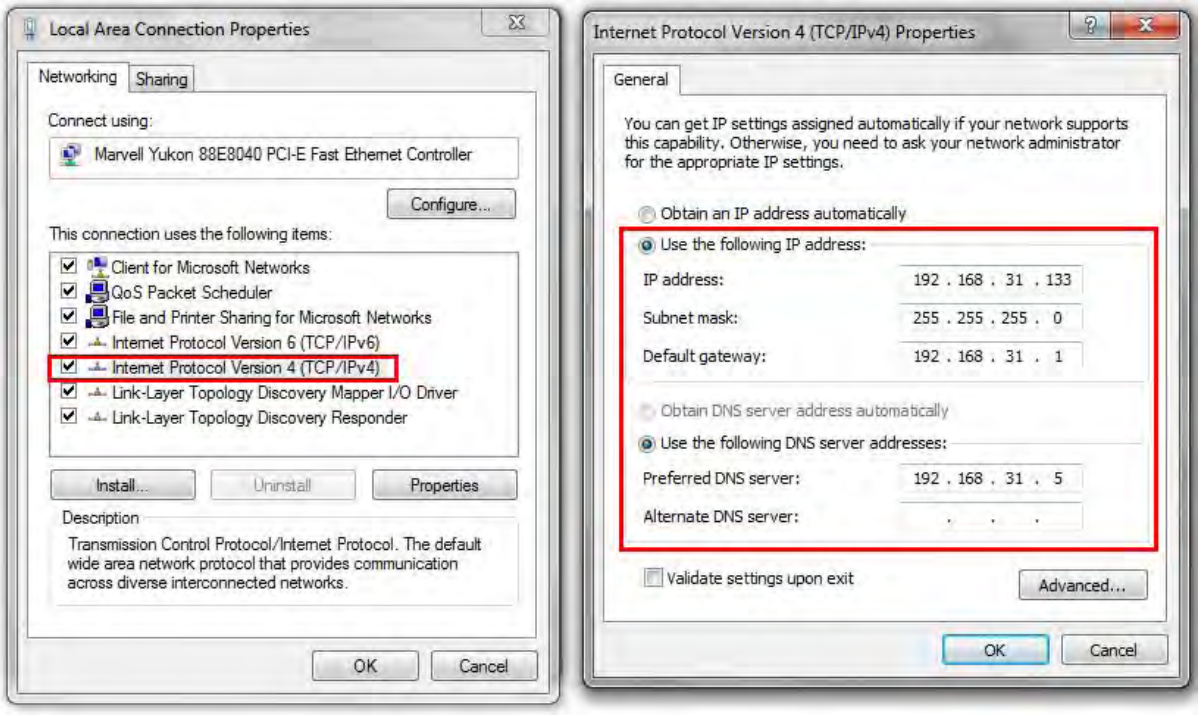


Figure 38: Local Area Connection Status

Click Details... to view the properties. If the **DHCP Enabled** is **Yes**, it is in Dynamic mode (an IP address is automatically assigned by the network). To change to static, the user must manually set the IP Address, Subnet mask, and Gateway Address for your PC. Click Properties to open the Local Area Connection Properties and double click the Internet Protocol Version 4 to obtain the general information to set the IP Address, Subnet Mask, Gateway Address and preferred DNS server.

Figure 39: Local Area Connection Properties/Internet Protocol Properties

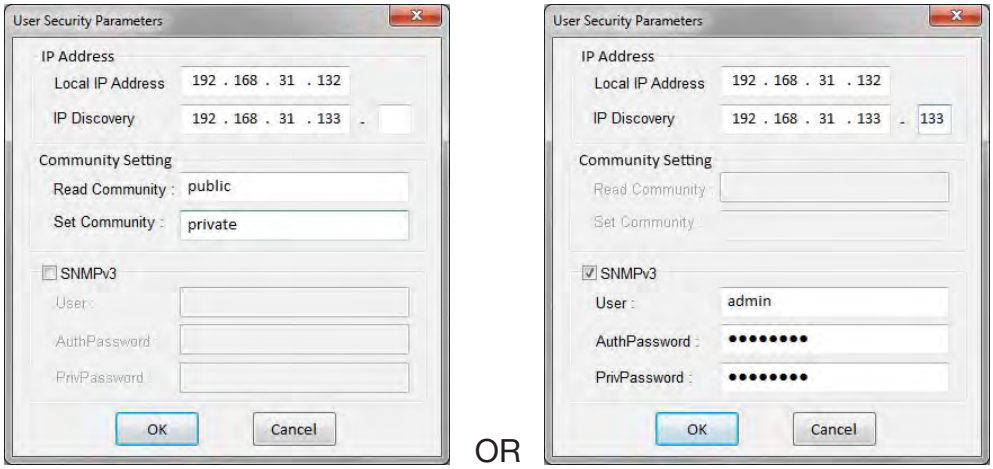

Local Area Connection Properties
Networking
Sharing
Connect using:
Marvell Yukon 88E8040 PCI-E Fast Ethernet Controller
Configure...
This connection uses the following items:
Client for Microsoft Networks
QoS Packet Scheduler
File and Printer Sharing for Microsoft Networks
Internet Protocol Version 6 (TCP/IPv6)
Internet Protocol Version 4 (TCP/IPv4)
Link-Layer Topology Discovery Mapper I/O Driver
Link-Layer Topology Discovery Responder
Install...
Uninstall
Properties
Description
Transmission Control Protocol/Internet Protocol. The default wide area network protocol that provides communication across diverse interconnected networks.
OK
Cancel
Internet Protocol Version 4 (TCP/IPv4) Properties
General
You can get IP settings assigned automatically if your network supports this capability. Otherwise, you need to ask your network administrator for the appropriate IP settings.
Obtain an IP address automatically
Use the following IP address:
IP address: 192 . 168 . 31 . 133
Subnet mask: 255 . 255 . 255 . 0
Default gateway: 192 . 168 . 31 . 1
Obtain DNS server address automatically
Use the following DNS server addresses:
Preferred DNS server: 192 . 168 . 31 . 5
Alternate DNS server:
Validate settings upon exit
Advanced...
OK
Cancel

5. Setup NIC Midspan with Phihong GUI

Please locate the **Phihong POE GUI** on your desktop or from your Start menu.

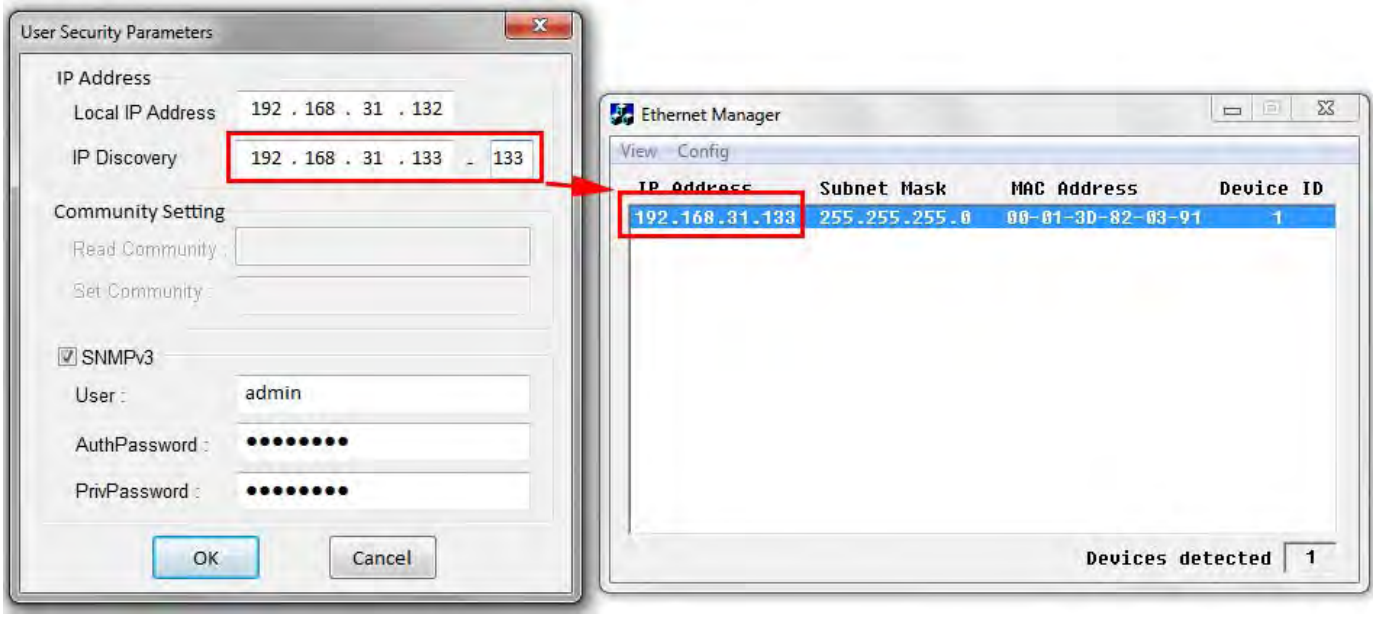
Step 1: Choose **Connection Type**: SNMP/LAN & WAN and click **Setting** to access **User Security Parameters**. Users must put in a range of IP Addresses to search from to locate the midspan. Use the ETM

Figure 40: GUI User Security Parameters



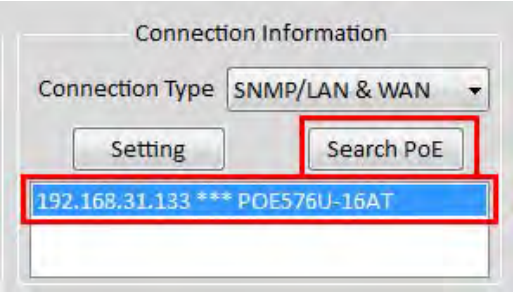
NOTE: Ensure that you are using either the community string or SNMPv3 encrypted passwords set using the Controller System setup, or the GUI will not detect the midspan. To verify the IP Address for your midspan, use the Ethernet Manager tool mentioned in earlier sections. The default password for both AuthPassword and PrivPassword is: **12345678**. Users may change these using the http:// access described in section 2 of Appendix B: Advanced Setup Options.

Figure 41: GUI User Security Parameters/Ethernet Manager



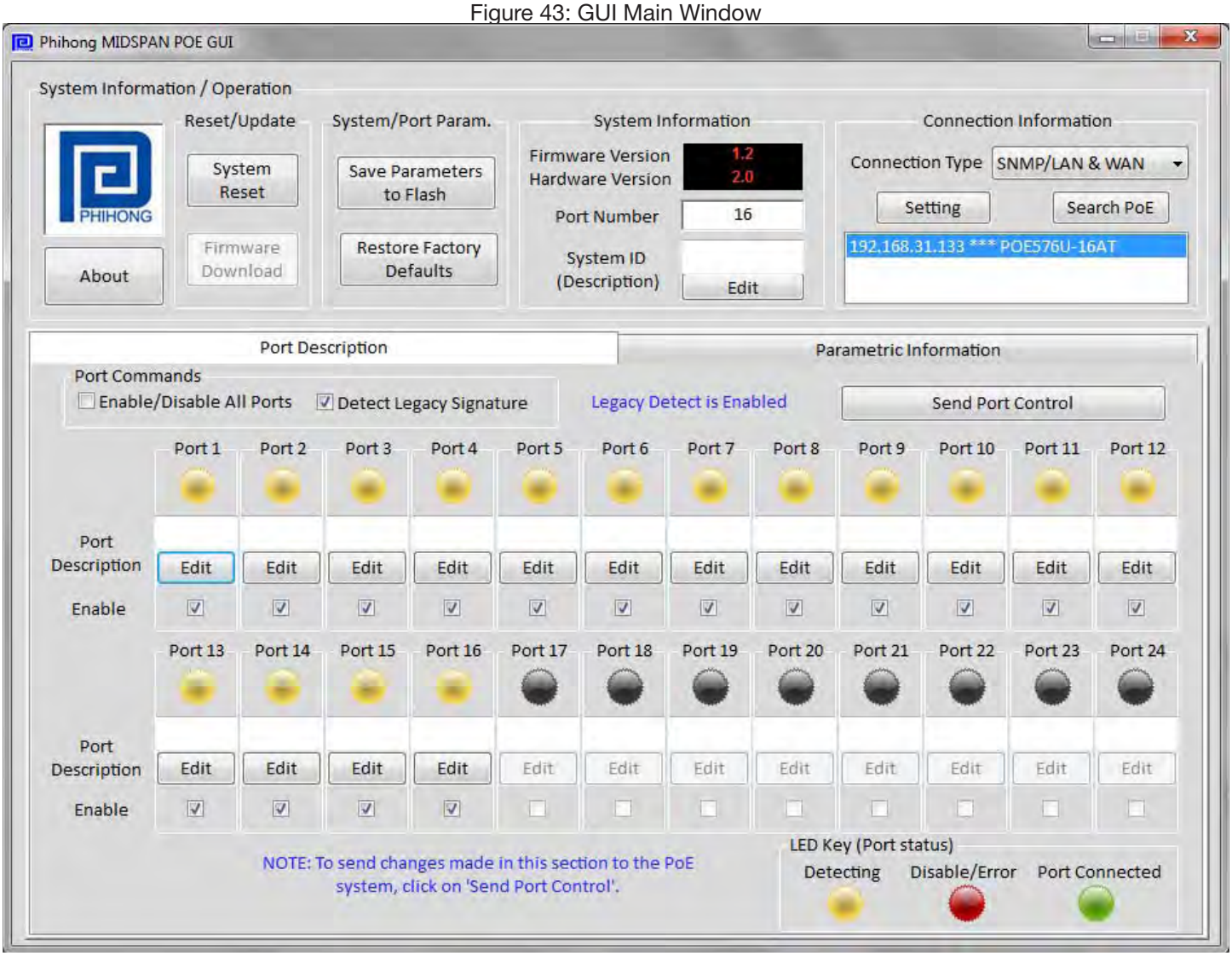
Step 2: Select **Search POE**: If Phihong POE device is found, click to select device

Figure 42: GUI Connection Information



NOTE: The IP address will be saved internally for the next use.

Figure 43: GUI Main Window


Phihong MIDSPAN POE GUI
System Information / Operation
Reset/Update
System Reset
Firmware Download
About
System/Port Param.
Save Parameters to Flash
Restore Factory Defaults
System Information
Firmware Version 1.2
Hardware Version 2.0
Port Number 16
System ID (Description)
Edit
Connection Information
Connection Type SNMP/LAN & WAN
Setting
Search PoE
192.168.31.133 *** POE576U-16AT
Port Description
Parametric Information
Port Commands
Enable/Disable All Ports
Detect Legacy Signature
Legacy Detect is Enabled
Send Port Control
Port 1 Port 2 Port 3 Port 4 Port 5 Port 6 Port 7 Port 8 Port 9 Port 10 Port 11 Port 12
Port 13 Port 14 Port 15 Port 16 Port 17 Port 18 Port 19 Port 20 Port 21 Port 22 Port 23 Port 24
Port Description
Enable
Edit
NOTE: To send changes made in this section to the PoE system, click on 'Send Port Control'.
LED Key (Port status)
Detecting
Disable/Error
Port Connected

All features except for the **Firmware Download** are supported. Please refer to **section 4 – Midspan GUI** of this document for the full description of the Phihong GUI features. To update firmware using SNMP please refer to **section 7 - Controller Setup**.

Appendix C

SNMP MIB:

Phihong USA Corp. registered Enterprise ID: **1.3.6.1.4.1.24852**
SNMP Version: **SNMPv3**
TCP, UDP Port: **161 SNMP** (Simple Network Management Protocol)1

Table 7 : SNMP MIB

OID	Name	Type	Value	Description
1.3.6.1.24852.2.2.1.0	poeSystemActionHubReset	INTEGER	ready (0) reset (1)	Reset the POE Controller
1.3.6.1.24852.2.2.2.0	poeSystemActionHubRestoreFactoryDefault	INTEGER	ready (0) restore (1)	Restore Factory Defaults
1.3.6.1.24852.2.2.3.0	poeSystemActionHubSaveconfiguration	INTEGER	ready (0) save (1)	Save the POE parameters to flash
1.3.6.1.24852.2.2.4.0	poeSystemAllPortPowerEnable	INTEGER	ready (0) disable (1) enable (2)	Setting this object at a value enable (2) enables detection mechanism for all ports. Setting this object at a value disable (1) disables detection mechanism for all ports
1.3.6.1.24852.2.2.6.0	poeSystemHWVersion	DisplayString	Read-Only	System hardware version for the main board
1.3.6.1.24852.2.2.7.0	poeSystemNumberOfchannel	INTEGER	Read-only	Number of ports available in the system
1.3.6.1.24852.2.2.8.0	poeSystemProductPartNumber	INTEGER	Read-only	Displays the product part number
1.3.6.1.24852.2.2.10.0	poeSystemFirmwareVersion	DisplayString	Read-only	System firmware version for the PoE
1.3.6.1.24852.2.2.11.0	poeSystemDescription	DisplayString (SIZE (0...10))	Read-Write	System Description, max. length of 10 characters
1.3.6.1.24852.2.2.12.0	poeSystemConsumptionPower***	INTEGER	Read-only	Measured power usage expressed in Watts
1.3.6.1.24852.2.2.13.0	poeSystemcontrolACPower***	INTEGER	Read-Write	Sets the value of available power in Watts to be supplied by primary (AC) power source
1.3.6.1.24852.2.2.14.0	poeSystemControlDCPower	INTEGER	Read-Write	Sets the value of available power in watts to be supplied by secondary (DC) power supply

1.3.6.1.24852.2.2.15.0	poeSystemControlBothPower***	INTEGER	Read-Write	Sets the value of the total available power in Watts to be supplied by both power sources
1.3.6.1.24852.2.3.1.1.1~24	poePortIndex	INTEGER	Read-only	A unique value for each port.
1.3.6.1.24852.2.3.1.2.1~24	poePortPowerEnable	INTEGER (1.2147483647)	Disable (1) Enable (2)	Setting this object at a value enable (2) enables the detection mechanism for this port. Setting this object at a value disable (1) disables the detection mechanism for this port
1.3.6.1.24852.2.3.1.3.1~24	poePortControlMaxPower***	INTEGER	Read-Write	This command specifies the max. power in watts to the port
.6.1.4.1.24852.2.3.1.4.1.0	poePortCurrentStatus***	INTEGER	undercurrent (1) overcurrent (2) both (3) ok (4)	Describes a current port status related to the power generation, the value undercurrent (1) indicated that the port current is below the minimal value since the attribute was last cleared. The value over current (2) indicates that the port exceeds the maximum value since the attribute was last cleared. The value both (3) indicates that both undercurrent and over current since the attribute was last cleared. The value ok (4) indicates neither an undercurrent or an overcurrent condition has been detected since the attribute was last cleared. This attribute is cleared through the power-Portcurrentstatus-Clear Action.

1.3.6.1.4.1.24852.2.3.1.5.0	poePortCurrentStatusclear***	INTEGER	off (1) clear (2)	Setting the value of this object to clear (2) clears the value of the poePortStatus and enables the agent to update the poePortStatus. During Read operation this value will be off (1)
1.3.6.1.4.1.24851.1.2.1.6.1~24	poePortDescription	DisplayString (SIZE (0...10))	Read-Write	Describes the port description for the port
1.3.6.1.4.1.24852.2.3.1.7.1~24	poePortDetectionStatus***	INTEGER	Read-only	Off (0) DiscR (1) DiscC (3) RampUp (4) RampDown (5) SampleI (8) SampleV (9)
1.3.6.1.4.1.24852.2.3.1.8.1~24	poePortPowerClassifications***	INTEGER	Read-only	Class0 (1) Class1 (2) Class2 (3) Class3 (4) Class4 (5)
1.3.6.1.4.1.24852.2.3.1.9.1~24	poePortPowerDetectionControl***	INTEGER	Read-Write	Command controls the port power detection control
1.3.6.1.4.1.24852.2.3.1.10.1~24	powPortPowerPriority***	INTEGER	Critical (1) High(2) Low (3)	Sets port priority
1.3.6.1.4.1.24852.2.3.1.11.1~24	powerPortPower	INTEGER	Read-only	Port Power reading in mWatts
1.3.6.1.4.1.24852.2.3.1.12.1~24	poePortVoltage	INTEGER	Read-only	Port Voltage reading in Volts
1.3.6.1.4.1.24852.2.3.1.13.1~24	poePortCurrent	INTEGER	Read-only	Port Current reading in mAmps
1.3.6.1.4.1.24852.2.3.1.14.1~24	poePortResistance	INTEGER	Read-only	Port Resistance read in Ohm
1.3.6.1.4.1.24852.2.4.1.1.1~24	poeTrapsControlGroupIndex	INTEGER (0.65535)	Not-accessible	Uniquely describes the group the Trap control is located
1.3.6.1.4.1.24852.2.4.1.2.1~24	poeTrapsControlEnable	INTEGER	TrapsDisabled (1) TrapsEnabled (2)	Enables and disables the Trap from the Agent
1.3.6.1.4.1.24852.2.5.1	poePortHWFailTrap	NOTIFICATION		Hardware Failure Trap
1.3.6.1.4.1.24852.2.5.2	poePortPeakOverCurrentTrap	NOTIFICATION		Peak over Current Trap

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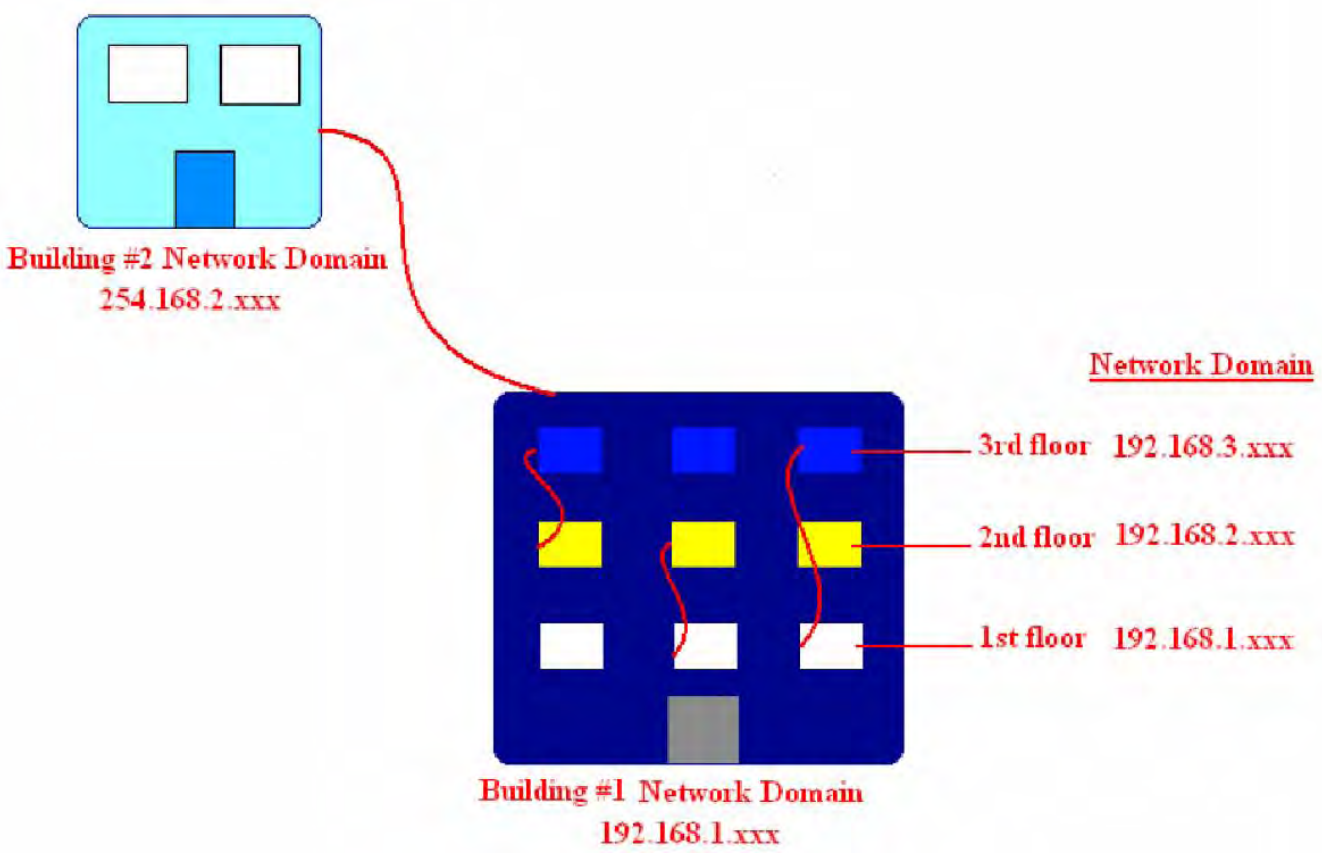
1.3.6.1.4.1.24852.2.5.3	poePortOverloadTrap	NOTIFICATION		Overload Trap
1.3.6.1.4.1.24852.2.5.4	poePortDiscoveryFailTrap	NOTIFICATION		Discovery Failure Trap
1.3.6.1.4.1.24852.2.5.6	poePortDisconnectTrap	NOTIFICATION		PortDisconnectTrap
1.3.6.1.4.1.24852.2.5.7	poePortVoltageFailTrap	NOTIFICATION		Port Voltage Fail Trap

*** This function is currently disabled. Reserved for future use.

1 The NIC Interface Midspan performs under the TCP/IP, UDP port of 161. UDP port 161 for SNMP is an official IANA registered EDP port number. While attempting to connect to the NIC Interface Midspan via a different network domain2 the user must acknowledge that the local network supports the UDP port 161.

Different Network Domain

Figure 44: Network Domain Diagram



Description of Diagram:

- Building #1 has on main Network Server that links all three floors together.
- Building #2 has one main Network Server with the Network Domain of 254.168.2.xxx.

Different methods of connection:

NOTE: Taking consideration that the **Access Control** from the **Controller Setup** is **Disabled** (allowing all access)

- **Connection within the same Network Domain**. (Please refer to the diagram above for Building #1. For instance:

  - The NIC Interface Midspan is connected to the Network Domain of **192.169.1.xxx** located on the 1st floor. All Computer connected to the Network Domain of **192.168.1.xxx** can communicate with the NIC Interface Midspan.
  - The NIC Interface Midspan remains connected on the Network Domain of **192.168.1.xxx**. Since Building 1 has a main Network Server that links all three floors together, the computers on the 2nd (**192.168.2.xxx**) and 3rd (**192.168.3.xxx**) floors can also communicate with the NIC Interface Midspan.

- **Connection between different Network Domains.** (Please refer to the diagram above Building #2) For instance:

  - The NIC Interface Midspan is connected to the Network Domain of Building #1 (**192.168.1.xxx**) would like to communicate with the NIC Interface Midspan from Building #1. Building #1 must configure the main Network server to allow access from an outside source, in this case Building #2. Building #1 must be able to support UDP port 161, for SNMP. Once the access is allowed, Building #2 can communicate with the NIC Interface Midspan.

Appendix D - SSL/TLS (optional)

As an added layer of security above standard SNMPv3 encryption, Phihong has added an option for Secure Sockets Layer (SSL)/Transport Layer Security (TLS) to ensure a secure connection over a network and provide additional security to the transfer of data. It is strongly recommended that first time users familiarize themselves with all steps within this section before attempting.

1. Getting Started

To get started, please visit the support section of our website, www.phihong.com or www.midspans.com, and download the following files packaged as Certificate Software under SNMPv3 Firmware:

- **openssl-0.9.81** (also available at www.openssl.org/source openssl-0.9.81.tar.gz)
- **f07-123** (also available at www.metavert.com/phihong/uClinux)

Step 1: Copy the folder **x509** to **c:\x509**. To locate this folder, please open the folder **f07-123** that you downloaded from our support page, then open **f07** then open **app**.

Step 2: Ensure that the SNMPv3 firmware is up-to-date. Check the firmware revision on your midspan to the version online at www.midspans.com/pages/support.php. To review this operation please turn to part **3.1 System Administration** under **Appendix B.**

Step 3: Download and run the Cygwin command prompt from the following webpage to start generating security certificates: http://www.cygwin.com/setup.exe. Users do not need to use this program if another is preferred, however all instructions will be based for this software.

2. Installing Cygwin

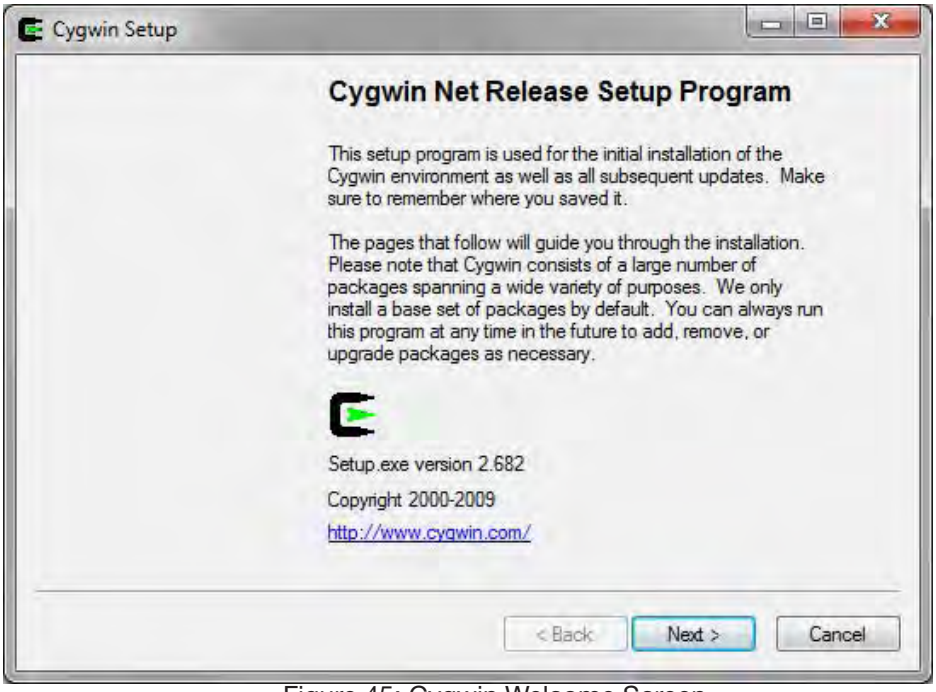

Cygwin Setup
Cygwin Net Release Setup Program
This setup program is used for the initial installation of the Cygwin environment as well as all subsequent updates. Make sure to remember where you saved it.
The pages that follow will guide you through the installation. Please note that Cygwin consists of a large number of packages spanning a wide variety of purposes. We only install a base set of packages by default. You can always run this program at any time in the future to add, remove, or upgrade packages as necessary.
Setup.exe version 2.682
Copyright 2000-2009
http://www.cygwin.com/
< Back
Next >
Cancel

Figure 45: Cygwin Welcome Screen

Click the **Install from Internet** radio button, then click **Next**

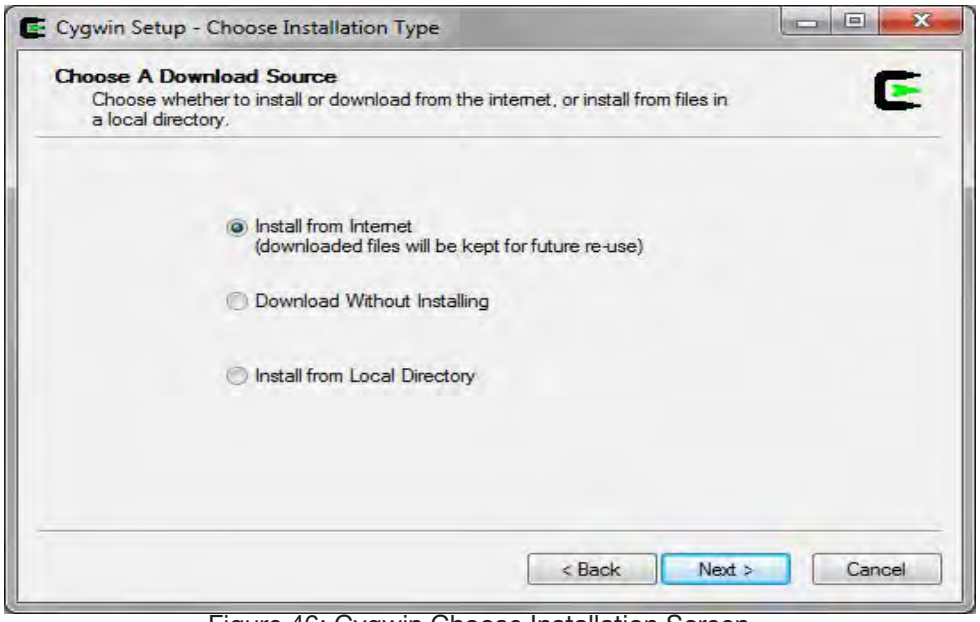

Cygwin Setup - Choose Installation Type
Choose A Download Source
Choose whether to install or download from the internet, or install from files in a local directory.
Install from Internet
(downloaded files will be kept for future re-use)
Download Without Installing
Install from Local Directory
< Back
Next >
Cancel

Figure 46: Cygwin Choose Installation Screen

Select a Directory where you would like the cygwin software installed. The default is **C:\cygwin**. Select for **All Users** as recommended then click **Next**

Cygwin Setup - Choose Installation Directory
Select Root Install Directory
Select the directory where you want to install Cygwin. Also choose a few installation parameters.
Root Directory
C:\cygwin
Browse...
Install For
All Users (RECOMMENDED)
Cygwin will be available to all users of the system.
Just Me
Cygwin will still be available to all users, but Desktop Icons, Cygwin Menu Entries, and important Installer information are only available to the current user. Only select this if you lack Administrator privileges or if you have specific needs.
< Back
Next >
Cancel

Figure 47: Cygwin Installation Directory Screen

Select the **Direct Connection** radio button, then click **Next**

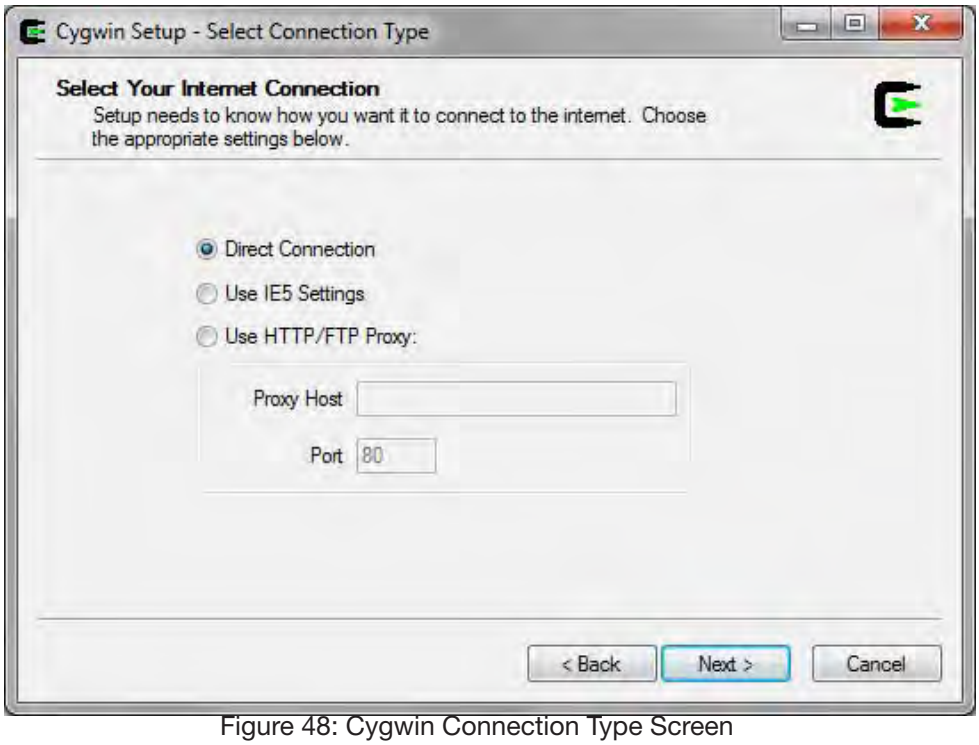

Cygwin Setup - Select Connection Type
Select Your Internet Connection
Setup needs to know how you want it to connect to the internet. Choose the appropriate settings below.
Direct Connection
Use IE5 Settings
Use HTTP/FTP Proxy:
Proxy Host
Port
80
< Back
Next >
Cancel

Figure 48: Cygwin Connection Type Screen

Select a webpage to download the software from. The first in the list: http://cygwin.mirrors.hoobly.com is sufficient. Now click Next to download.

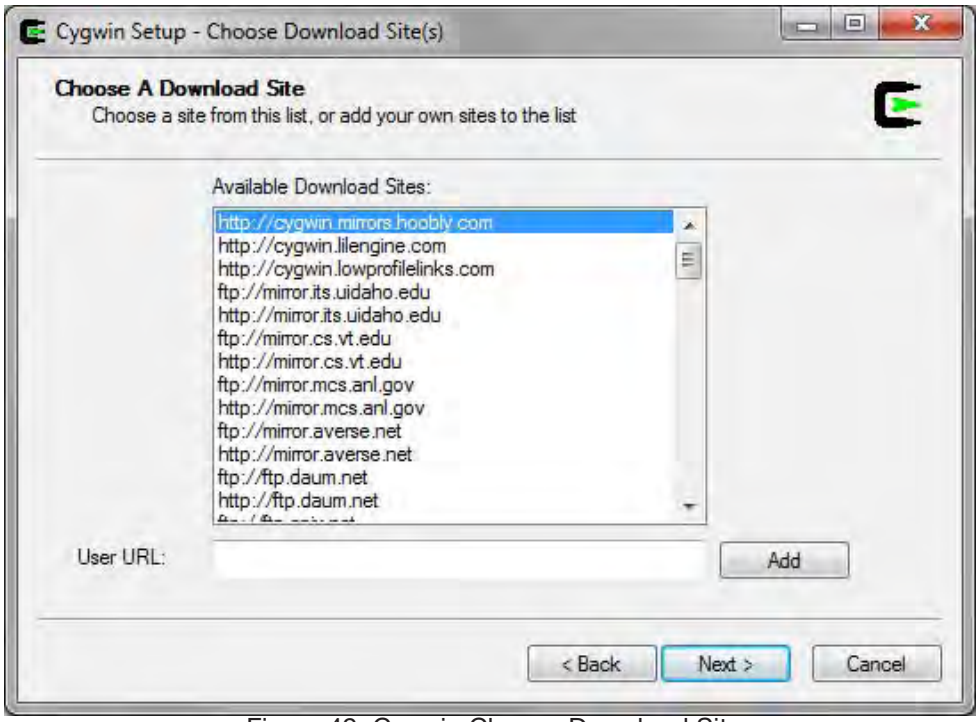


Figure 49: Cygwin Choose Download Site

Click the View button located in the upper right hand corner once to get to the screen below. Scroll down till you find openssl: The OpenSSL runtime environment and click “Skip” till you get 0.9.8l.tar. Click next to begin the installation.

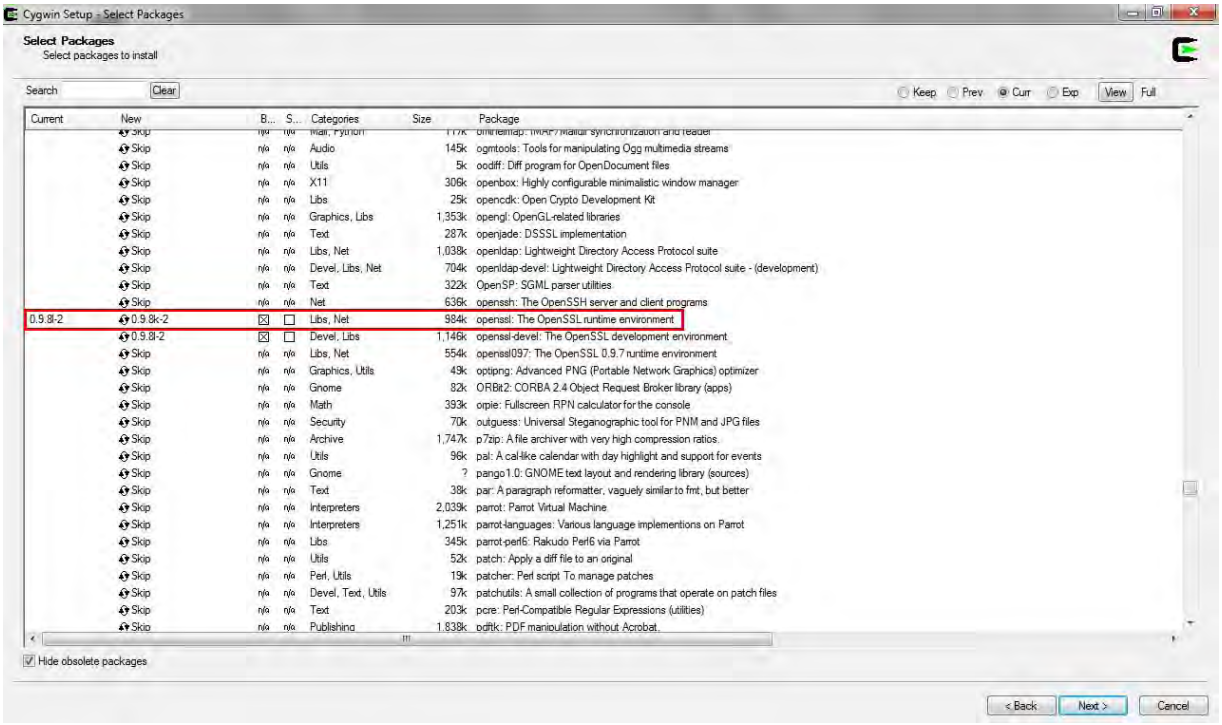

Cygwin Setup - Select Packages
Select Packages
Select packages to install
Search
Clear
Keep
Prev
Curr
Exp
View
Full
Current
New
B...
S...
Categories
Size
Package
Skip n/a n/a Audio 145k ogmtools: Tools for manipulating Ogg multimedia streams
Skip n/a n/a Utils 5k oodiff: Diff program for OpenDocument files
Skip n/a n/a X11 306k openbox: Highly configurable minimalistic window manager
Skip n/a n/a Libs 25k opencdk: Open Crypto Development Kit
Skip n/a n/a Graphics, Libs 1,353k opengl: OpenGL-related libraries
Skip n/a n/a Text 287k openjade: DSSSL implementation
Skip n/a n/a Libs, Net 1,038k openldap: Lightweight Directory Access Protocol suite
Skip n/a n/a Devel, Libs, Net 704k openldap-devel: Lightweight Directory Access Protocol suite - (development)
Skip n/a n/a Text 322k OpenSP: SGML parser utilities
Skip n/a n/a Net 636k openssh: The OpenSSH server and client programs
0.9.8l-2 0.9.8k-2 Libs, Net 984k openssl: The OpenSSL runtime environment
0.9.8l-2 Devel, Libs 1,146k openssl-devel: The OpenSSL development environment
Skip n/a n/a Libs, Net 554k openssl097: The OpenSSL 0.9.7 runtime environment
Skip n/a n/a Graphics, Utils 49k optipng: Advanced PNG (Portable Network Graphics) optimizer
Skip n/a n/a Gnome 82k ORBit2: CORBA 2.4 Object Request Broker library (apps)
Skip n/a n/a Math 393k orpie: Fullscreen RPN calculator for the console
Skip n/a n/a Security 70k outguess: Universal Steganographic tool for PNM and JPG files
Skip n/a n/a Archive 1,747k p7zip: A file archiver with very high compression ratios.
Skip n/a n/a Utils 96k pal: A cal-like calendar with day highlight and support for events
Skip n/a n/a Gnome ? pango1.0: GNOME text layout and rendering library (sources)
Skip n/a n/a Text 38k par: A paragraph reformatter, vaguely similar to fmt, but better
Skip n/a n/a Interpreters 2,039k parrot: Parrot Virtual Machine
Skip n/a n/a Interpreters 1,251k parrot-languages: Various language implementions on Parrot
Skip n/a n/a Libs 345k parrot-perl6: Rakudo Perl6 via Parrot
Skip n/a n/a Utils 52k patch: Apply a diff file to an original
Skip n/a n/a Perl, Utils 19k patcher: Perl script To manage patches
Skip n/a n/a Devel, Text, Utils 97k patchutils: A small collection of programs that operate on patch files
Skip n/a n/a Text 203k pcre: Perl-Compatible Regular Expressions (utilities)
Skip n/a n/a Publishing 1,838k pdftk: PDF manipulation without Acrobat.
Hide obsolete packages
< Back
Next >
Cancel

Figure 50: Cygwin Installation Directory Screen

The download process may take a few minutes. Once completed you may run the Cygwin command prompt to start generating the appropriate Certificate.

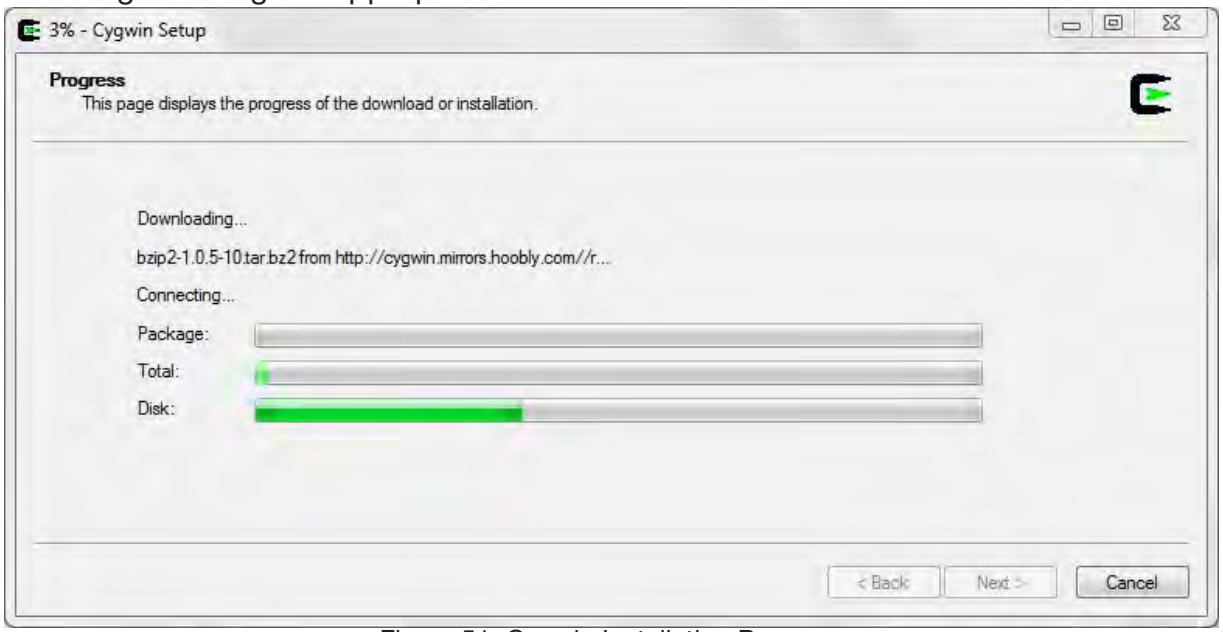


Figure 51: Cygwin Installation Progress

3. Generating Security Certificates

Double click the Cygwin icon on the desktop to run the command prompt.

The following steps to generate the new certificate need to be followed exactly:

Step 1: enter the following - cd c:/x509 and press the enter key

Step 2: enter the following - bash x509.sh and press the enter key

Step 3: enter a capital N to make new certificate. If the letter is not capitalized the command prompt may not follow the command.

/cygdrive/c/x509
$ cd c:/x509
/cygdrive/c/x509
$ bash x509.sh
OpenSSL Utility
N. Make new certificate
R. Rebuild Root CA certificate
S. Server test
Certificate Name: [boa-ssl]
[boa-ssl]
Generating RSA private key, 2048 bit long modulus
+++
...+++
e is 65537 (0x10001)
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
Country Name (2 letter code) [TW]:

Figure 52: Cygwin Command Prompt Screen

Follow the on screen directions. Not all information needs to be entered. To leave as default leave blank. Enter the midspan IP address when prompted for an IP address. Finish to generate the two valid certificate files: **boa-ssl.crt** and **boa-ssl.pem**.

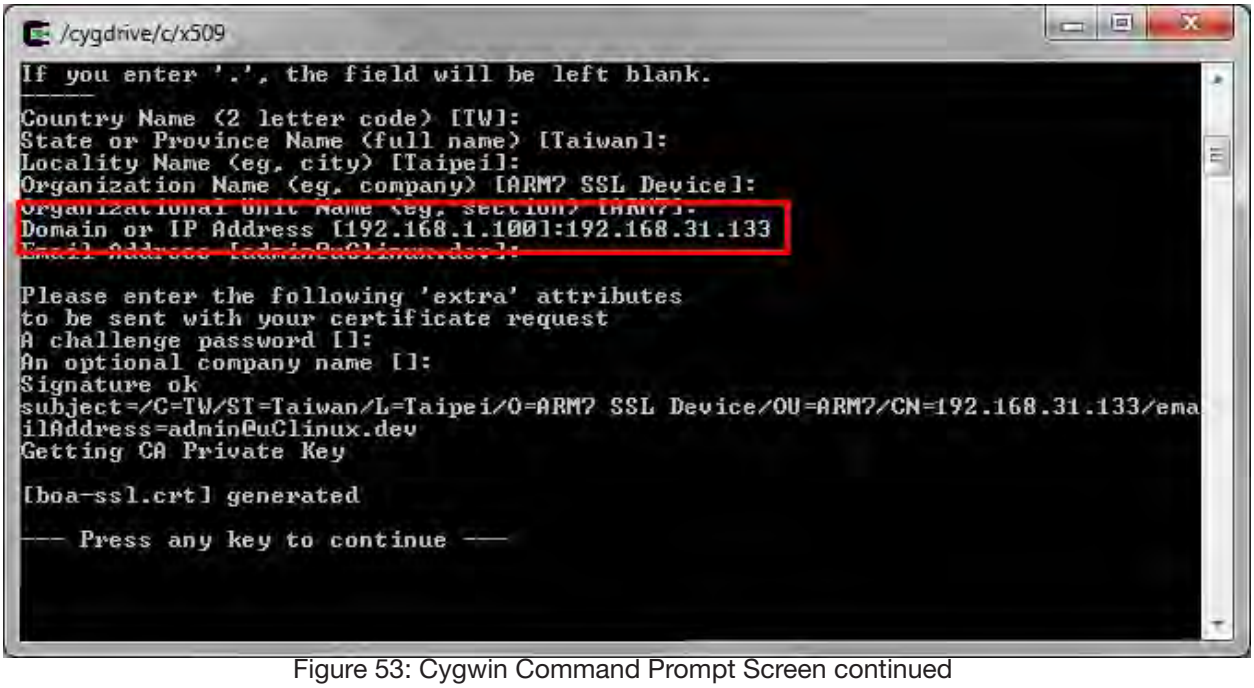

/cygdrive/c/x509
If you enter '.', the field will be left blank.
Country Name (2 letter code) [TW]:
State or Province Name (full name) [Taiwan]:
Locality Name (eg, city) [Taipei]:
Organization Name (eg, company) [ARM? SSL Device]:
Domain or IP Address [192.168.1.100]:192.168.31.133
Please enter the following 'extra' attributes
to be sent with your certificate request
A challenge password []:
An optional company name []:
Signature ok
subject=/C=TW/ST=Taiwan/L=Taipei/O=ARM? SSL Device/OU=ARM?/CN=192.168.31.133/emailAddress=admin@uClinux.dev
Getting CA Private Key
[boa-ssl.crt] generated
--- Press any key to continue ---

Figure 53: Cygwin Command Prompt Screen continued

4. Load Security Certificates

4.1 Load Certificates into the Midspan SNMP card

Now that the certificates have been generated, they need to be uploaded into the midspan as well as your internet browser (IE7, IE8, and Mozilla Firefox 3.0 and later).

Open the folder containing the certificates. They will be located at c:\x509\certs.

Ensure connection with your midspan via SNMP, then in a new windows browser window enter the following: ftp://xxx.xxx.xxx.xxx, where the x's represent the URL of your midspan. You will need to log in as you would through normal http:// access.

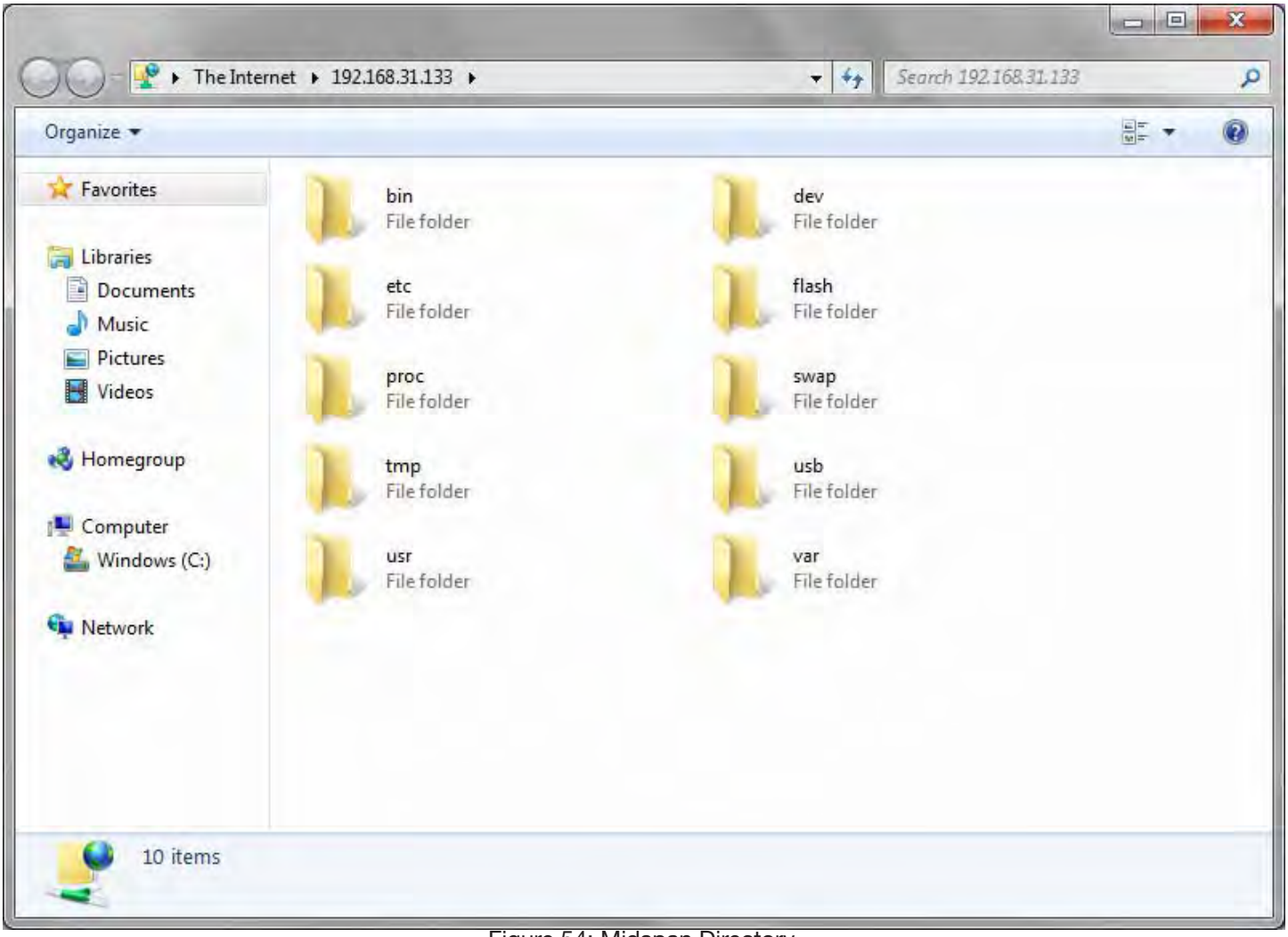


Figure 54: Midspan Directory

Open the folders **Flash** then **config** then **ssl**. Now copy the files **boa-ssl.crt** and **boa-ssl.pem** from the folder x509/certs.

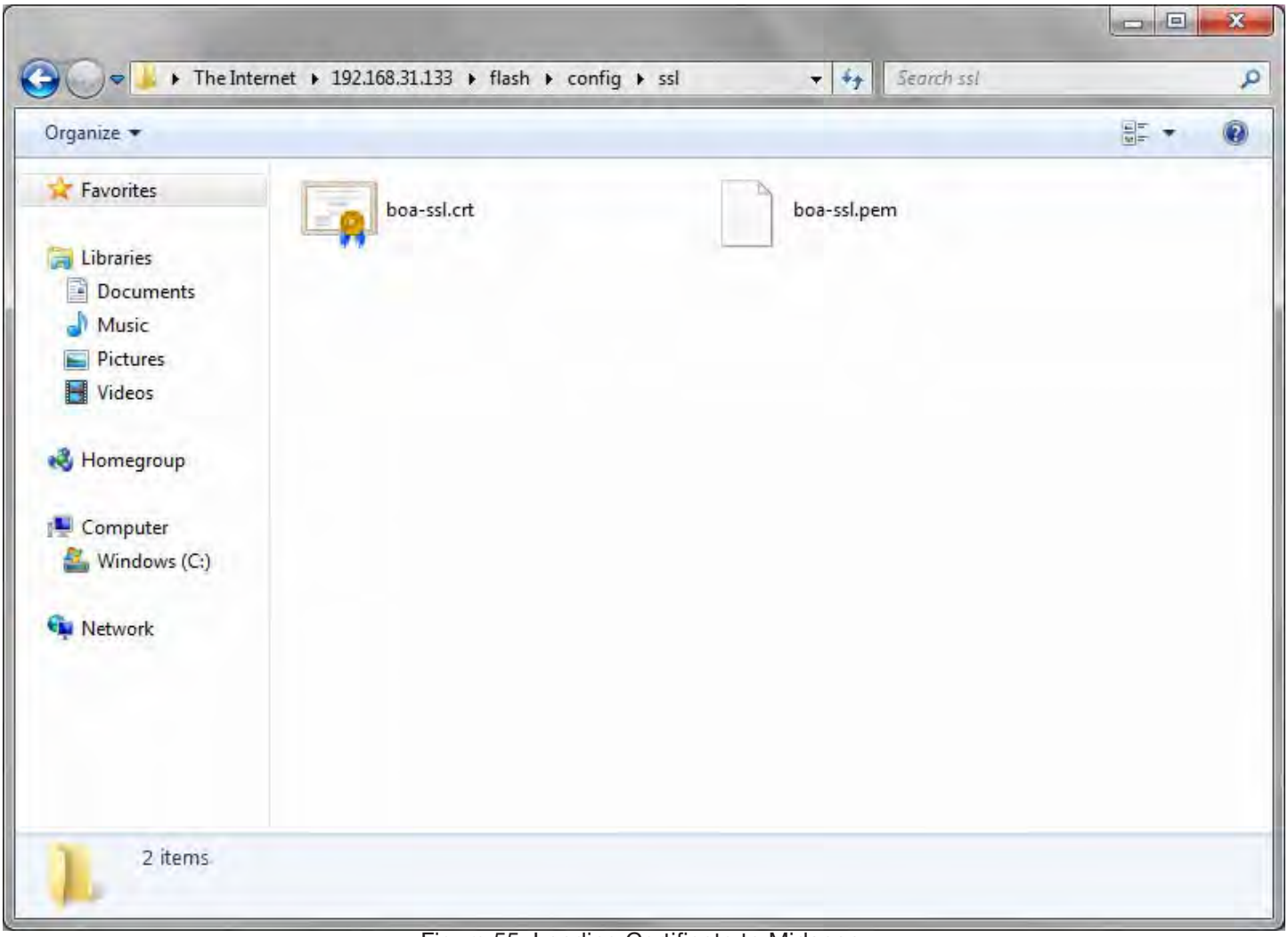


Figure 55: Loading Certificate to Midspan

4.2 Load Certificates into Internet Explorer

Now that the certificates are loaded into the Midspan you will need to upload a certificate into the web browser of your choice. See the next section 4.3 for Mozilla Firefox.

Locate the file **rootca.crt** and double click it to start the installation process. (file is located in **c:\x509\Root**)

When prompted press the radio put next to "**Place all certificates in the following store**" then hit the **browse** button to choose a store location.

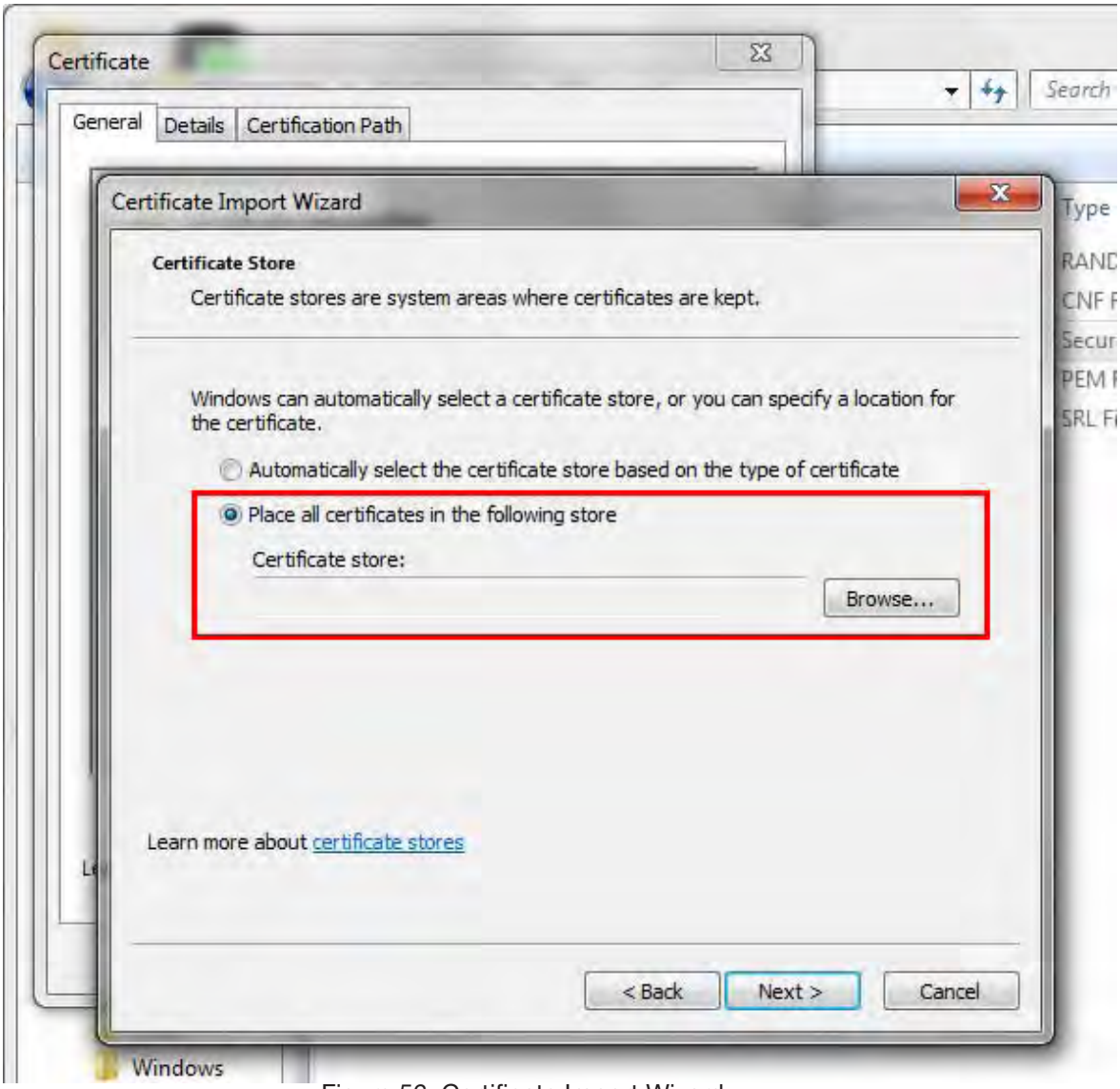

Certificate
General
Details
Certification Path
Certificate Import Wizard
Certificate Store
Certificate stores are system areas where certificates are kept.
Windows can automatically select a certificate store, or you can specify a location for the certificate.
Automatically select the certificate store based on the type of certificate
Place all certificates in the following store
Certificate store:
Browse...
Learn more about certificate stores
< Back
Next >
Cancel
Windows

Figure 56: Certificate Import Wizard

Select the folder Trusted Publishers and press OK. Click Next to install the certificate.

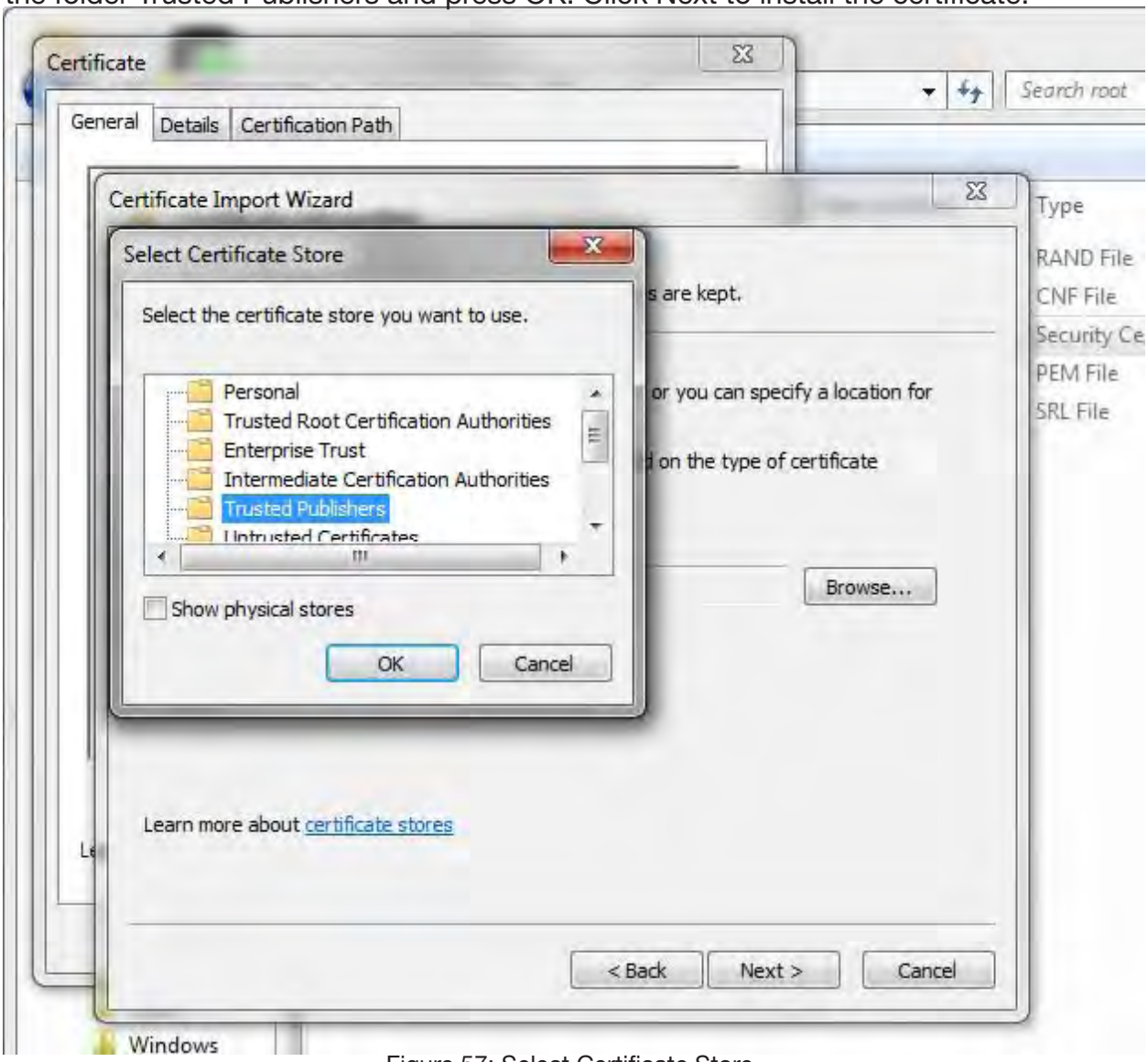


Figure 57: Select Certificate Store

Once the upload process is complete it is important to restart the midspan. Disconnect from the AC power for 10 seconds, then reconnect. If not using Mozilla Firefox, skip to section 5 to start the connection via SSL/TSL.

4.3 Load Certificates into Mozilla Firefox

Open the Firefox web browser and select "**options**" under the **Tools** menu. Under the **Advanced** section click the button "**View Certificates**".

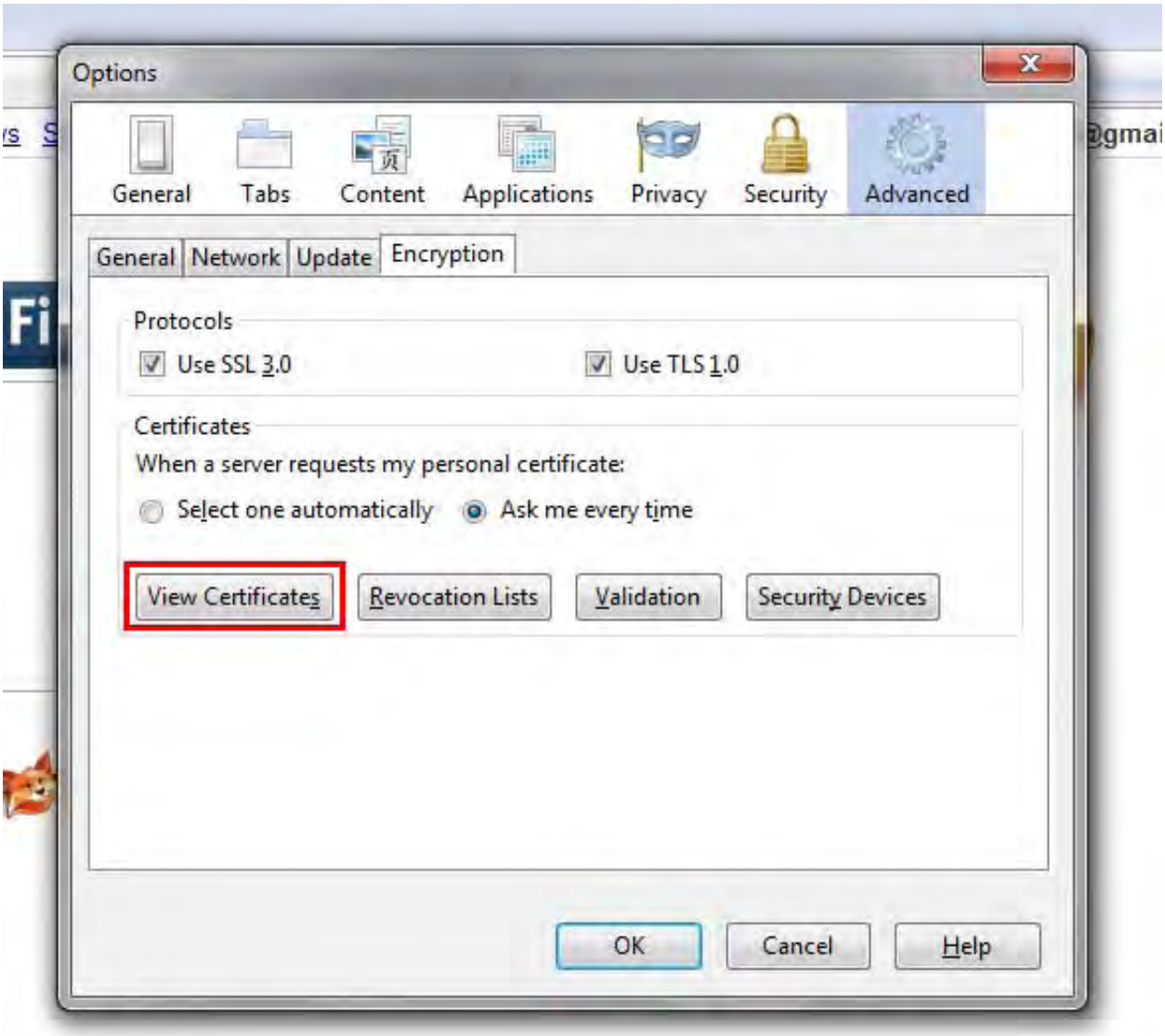


Figure 58: View Certificates

In the **Certificate Manager** ensure the **Authorities** tab is selected and click **Import.** A new window will appear to select the appropriate certificate. Locate the file **rootca.crt** located in the folder **root** under **x509** and click **Open.**

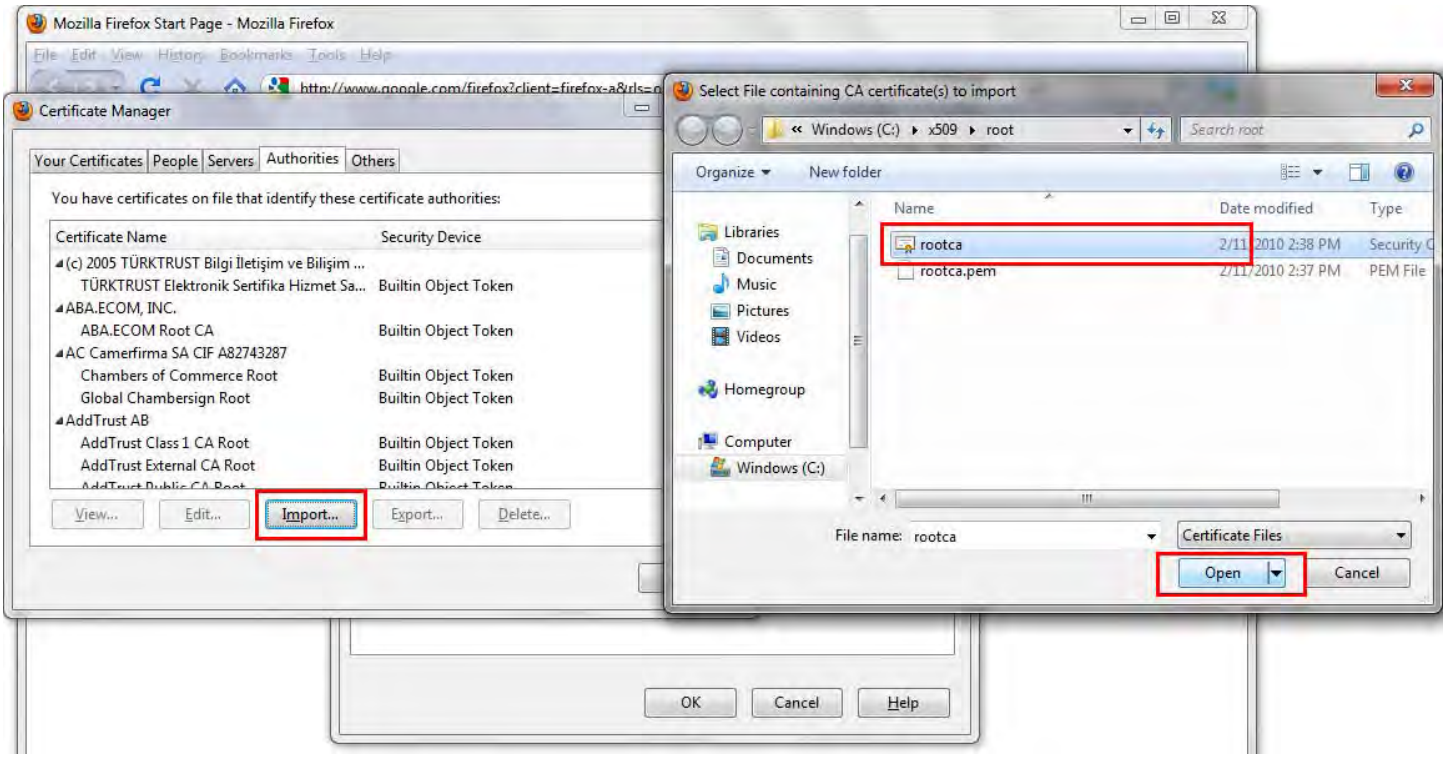


Figure 59: Load Root Certificate

A new **Certificate Manager** window will appear. Make sure that all of the radio boxes are checked then click OK. The certificate should now be properly loaded into Mozilla Firefox.

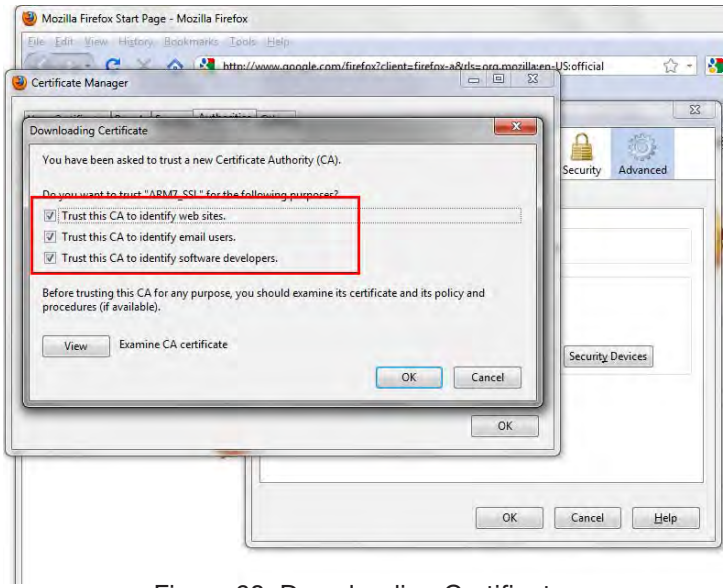

Mozilla Firefox Start Page - Mozilla Firefox
Certificate Manager
Downloading Certificate
You have been asked to trust a new Certificate Authority (CA).
Trust this CA to identify web sites.
Trust this CA to identify email users.
Trust this CA to identify software developers.
Before trusting this CA for any purpose, you should examine its certificate and its policy and procedures (if available).
View
Examine CA certificate
OK
Cancel
Security
Advanced
Security Devices
OK
Cancel
Help

Figure 60: Downloading Certificate

5. Enable SSL

Go to the webpage **http://XXX.XXX.XX.XXX** where **XXX.XXX.XX.XXX** is the IP address of your midspan. Access the **System** page to alter the **Device Configuration**. Under the LAN heading there will be an option for SSL. The default option is set to Disable. Click the down arrow to change the settings to **Enable**. Click save and reboot the midspan to restart with SSL.

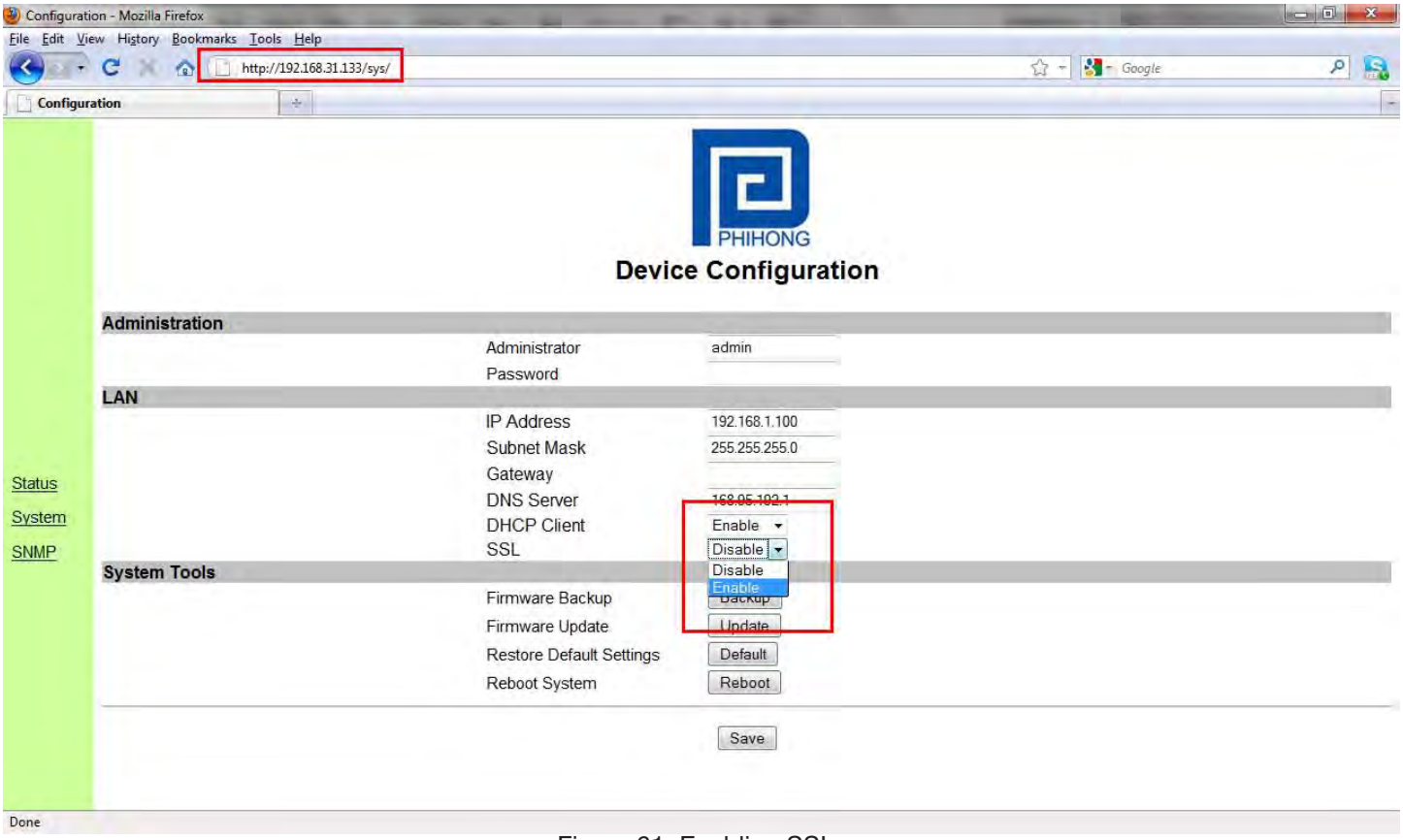


Figure 61: Enabling SSL

6. Access via SSL

The webpage will now display an error message saying that there is no connection to this page. The midspan may no longer be accessed via http://. You must now use the webpage https://**XXX.XXX.XX.XXX** where **XXX.XXX.XX.XXX** is the IP address of your midspan. You may now login with the secure connection.

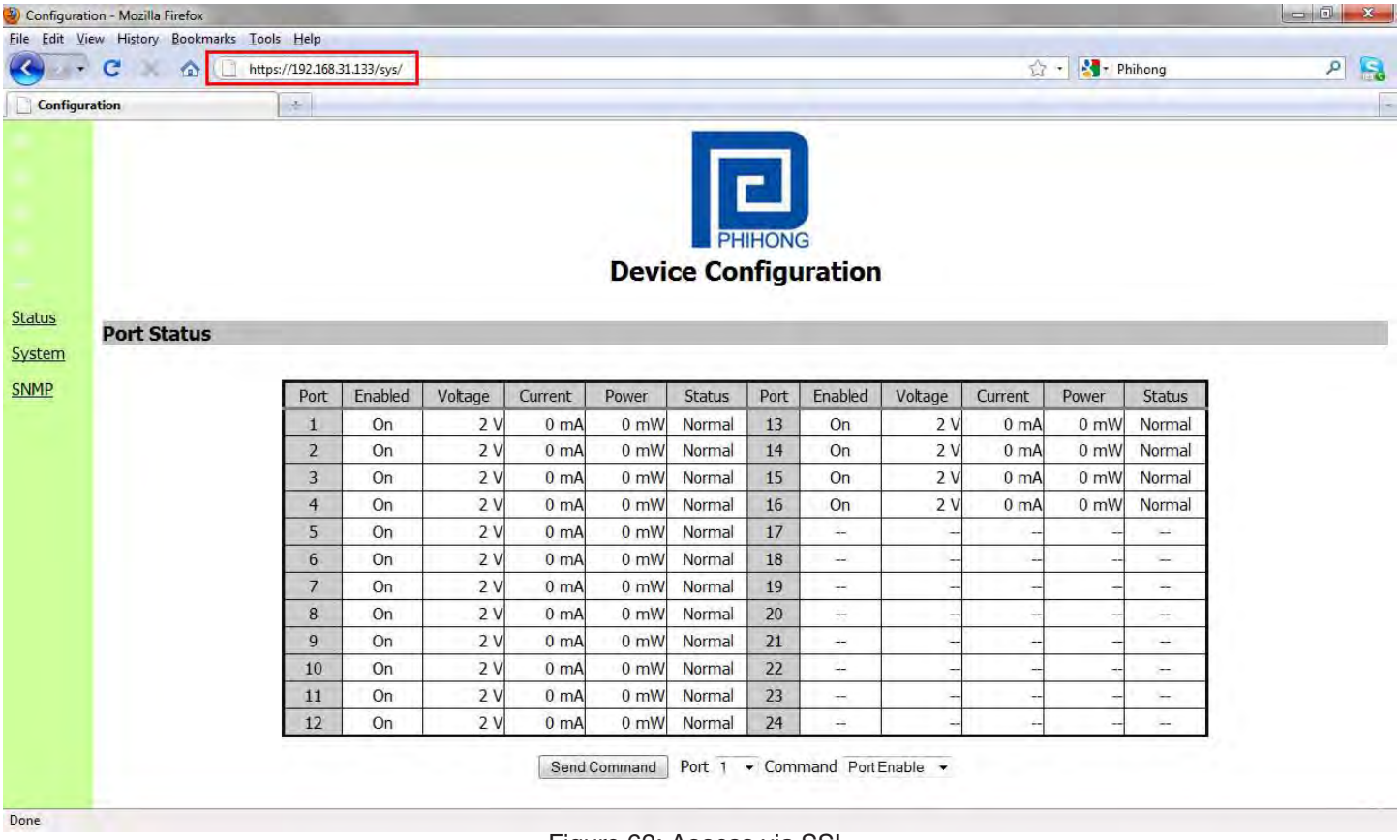

Configuration - Mozilla Firefox
File Edit View History Bookmarks Tools Help
https://192.168.31.133/sys/
Phihong
Configuration
PHIHONG
Device Configuration
Status
System
SNMP
Port Status
Port Enabled Voltage Current Power Status Port Enabled Voltage Current Power Status
1 On 2 V 0 mA 0 mW Normal 13 On 2 V 0 mA 0 mW Normal
2 On 2 V 0 mA 0 mW Normal 14 On 2 V 0 mA 0 mW Normal
3 On 2 V 0 mA 0 mW Normal 15 On 2 V 0 mA 0 mW Normal
4 On 2 V 0 mA 0 mW Normal 16 On 2 V 0 mA 0 mW Normal
5 On 2 V 0 mA 0 mW Normal 17 -- -- -- -- --
6 On 2 V 0 mA 0 mW Normal 18 -- -- -- -- --
7 On 2 V 0 mA 0 mW Normal 19 -- -- -- -- --
8 On 2 V 0 mA 0 mW Normal 20 -- -- -- -- --
9 On 2 V 0 mA 0 mW Normal 21 -- -- -- -- --
10 On 2 V 0 mA 0 mW Normal 22 -- -- -- -- --
11 On 2 V 0 mA 0 mW Normal 23 -- -- -- -- --
12 On 2 V 0 mA 0 mW Normal 24 -- -- -- -- --
Send Command Port 1 Command Port Enable
Done

Figure 62: Access via SSL

Visit digikey.com

7. Troubleshooting

This section is for the diagnosis of minor problems that may occur during the set-up of SSL capability on this midspan. If your issue is not listed here, please consult directly with your local phihong representative.

Table 8: SSL Troubleshooting

Problem	Possible Solutions
Unable to access the web based GUI	1. Ensure that the IP address is correct. If the power is reset on the midspan the IP address may be re-assigned by the network and a new IP address is necessary. You will need to create a new certificate based on this new IP address. A static IP address is best for this option as the IP address will remain constant and 2. Ensure that you are accessing via https:// and not the normal http://. Without the additional 's', the web based GUI will not open
I've completed all the steps and the certificate isn't working	1. Regenerate the security certificate. An error may have occurred. 2. Check the IP address has not changed 3. Regenerate a Root certificate. Please see Section 7.1 for further instructions. 4. Ensure that the SSL option is enabled and that the URL starts with https:// 5. Ensure that the Root certificate is properly loaded into the internet browser. For Mozilla Firefox, this may require removing the certificate and reloading.
Others	1. Check to ensure that the midspan is properly connected to the network 2. Check all the Ethernet cables for integrity 3. Ensure all firmware is up to date. This program uses third party software, please check to ensure the latest firmware is being used.

7.1 Regenerating a Root Certificate

Before starting this step please review Sections 2 and 3 from this Appendix. In Step 2, you should have installed Cygwin into your computer. Ensure that it is running properly. In Step 3 you went through the process of generating your security certificates to be loaded into the midspan. Generating the Root Certificate is a similar process.

Double click the Cygwin icon on the desktop to run the command prompt.

The following steps to generate the new certificate need to be followed exactly:

Step 1: enter the following - cd c:/x509 and press the enter key

Step 2: enter the following - bash x509.sh and press the enter key

Step 3: enter a capital R to make a new Root certificate. If the letter is not capitalized the command prompt may not follow the command.

Figure 63: Regenerate Root Certificate

Cygwin will start generating the new root certificate. Ensure that you are entering the exact same information that was entered for the security certificate. If there is not an exact match the certificates will read as invalid. Once **Press any key to continue** appears on the screen the new root is ready to be loaded into the internet browser. Please review section 4 of this appendix for a refresher.

Figure 64: Regenerate Root Certificate Continued

/cygdrive/c/x509
R. Rebuild Root CA certificate
S. Server test
Generating RSA private key, 2048 bit long modulus
.+++
.....+++
e is 65537 (0x10001)
You are about to be asked to enter information that will be incorporated
into your certificate request.
What you are about to enter is what is called a Distinguished Name or a DN.
There are quite a few fields but you can leave some blank
For some fields there will be a default value,
If you enter '.', the field will be left blank.
Country Name (2 letter code) [TW]:
State or Province Name (full name) [Taiwan]:
Locality Name (eg, city) [Taipei]:
Organization Name (eg, company) [ARM7 SSL RootCA]:
Organizational Unit Name (eg, section) [ARM7]:
Common Name (eg, YOUR name) [ARM7_SSL]:
Email Address [admin@uClinux.dev]:
--- Press any key to continue ---

Appendix C: Frequently Asked Questions

Q: What happens if I forget my username and passwords for the NIC Interface?

A: Please contact Phihong Sales for further information on this topic.

Q: What is the function of the “current share” pin on the CD Power connector? Are there any protocols or procedures associated with it?

A: The DC solution contains 3x 500W 50V rectifier modules (1000W N+1) with custom cables available for connection between the rectifier rack and up to 4 midspans. The current share pin is an option which could be used to have the power supply inside the midspan current share with the rectifiers. There are no protocols or procedures associated with it other than it’s designed only to work with our rectifier system and even then its not perfect sharing due to the inrush limiting components inside the midspan located on the DC input.

Q: What type of Display Properties settings are required to run the Phihong SMNP v3 GUI?

A: 16-Bit: 1024 X 768 pixels, 1280 X 1024 pixels
32-Bit: 1024 X 768 pixels, 1280 X 1024 pixels

If the settings are set to be at least the values shown below, the edges of the GUI window will be cropped.
16-Bit: 640 X 480 pixels, 800 X 600 pixels
32-Bit: 640 X 480 pixels, 800 X 600 pixels

Q: My ports status information is taking a long time to load while I have SSL Enabled, Is there something wrong?

A: No. With SSL enabled users may experience delays in loading their information. This is to allow time for the appropriate security certificate identification and validation.